



## Value Chain Analysis of Banana in Some Areas of Narsingdi District

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**Abstract:** *The present study was designed to measure value chain analysis of Banana in selected area of Narsingdi District. Primary data were collected from the Banana growing area of Shibpur and Manohordi under Narsingdi district. Thirty farmers and thirty traders were selected through convenience sampling procedure. Simple descriptive methods were used to analyze the data. Among many cultivars Champa (Apple Banana) had been selected for this research work. The major findings of the study revealed that Banana production was profitable. In the production and marketing system of Banana, many value chain actors were involved such as Faria, Bepari, Arathdar, wholesaler and retailer. In this study, it was found that young and illiterate farmers were mostly engaged in Banana cultivation. Farming experience of Banana farmers ranged from 2 to above 20 years. Farm gate price of banana received by farmers per Bunch was Tk. 450 and purchase price per Bunch of banana paid by retailers was Tk. 680. Average sales price per Bunch of banana as received by retailer was Tk. 720. The total marketing cost was estimated at Tk. 184 per Bunch of banana. Among all intermediaries wholesalers' cost were highest and the lowest for Arathdar. The net marketing margin of per Bunch banana of Farmer, Faria, Bepari, Arathder, Wholesalers and Retailers were Tk. 33, 20, 7, 2, 10 and 14 respectively. The value addition of banana in value chain for Farmers, Faria, Bepari, Arathder, Wholesalers and Retailers were respectively 11.11, 10.00, 9.09, 2.5, 10.57 and 5.88 percent for per Bunch of banana. The study identified some major problems faced by the actors in the banana value chain. The major problems faced by them included lack of capital, lack of good quality sucker, lack of subsidy, lack of availability of adequate input, lower price of banana, transportation problem, shortage of market and storage facilities and dominance of value chain actors. Some recommendations are given to solve the constraints.*

**Keywords:** *Value chain, GDP, Acre, Bangladesh Krishi bank, AEZ.*

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## 1. Introduction

Bangladesh is primarily an agricultural country dominated by crop production. As a developing country, it has been striving for rapid development of its economy. The economic development is inextricably linked with the performance of this sector. The performance of this sector has an overwhelming impact on major macroeconomic objectives like employment generation, poverty alleviation, human resources development and food security. The overall performance of the economy is, therefore, yet inextricably linked to the performance of the agricultural sector. In order to ensure long term food security for the people, a profitable, sustainable and environment-friendly agricultural system is critical. Agricultural sector plays an important role in overall economic development of Bangladesh. The agricultural sector (crops, animal farming, forests and fishing) contributes 14.74 percent to the country's GDP, provides employment about 41 percent of the labor force according to Quarterly Labor Force Survey 2015-16. Moreover, agriculture is the source of wide range of consumer demanded agricultural commodity markets, especially in rural areas. The country has a vast delta with a population of 166.36 million encompassing an area of 147570 sq. km (BER, 2017). Agriculture occupies a key position in the overall economic sphere of the country in terms of its contribution to Gross Domestic Product (GDP). Figure 1.1 represents the sectorial share of GDP at constant prices (Base Year: 2005-06). Broad agriculture sector which includes crops, livestock, fisheries and forestry contributes 16.33 percent to the gross domestic product (GDP) as a whole in the FY

2013-14 (BER, 2015). Bangladesh is agricultural country. Most of the people are depends on agriculture directly or indirectly. Agriculture has a great contribution to the Gross Domestic Product (GDP) of the country. About 14.75% of GDP is derived from agriculture in the year 2017-18 (BBS, 2018). Banana is one of the major fruits of Bangladesh. It occupies an important position among the fruits of the country not only for its highest production among the fruits but also for its increasing popularity too many farmers as an economic crop and to many people as a nutritious fruit. *Musa spp*, banana and plantain, constitute the fourth most important staple food commodity of the world, after rice, wheat and maize (Islam *et al.*, 2016). Banana is one of the most important commercial tropical fruits traded. Bangladesh is an agricultural country and most of the inhabitants are involved in agriculture directly or indirectly for their livelihood. The country possesses very fertile land in which diversified crops grow very easily. Among more than 118 minor crops in Bangladesh, banana is one of the top listed fruit crops, which is available throughout the year and consumption rate is higher than any other fruits. It has great economic importance as well as nutritional value. In Bangladesh, total Cropped Area is 36669 acres and cropping intensity is 190 %. Agro ecology of the country is divided in 30 AEZs. The total cultivated area of horticultural crops is about 0.69 million hectare which is about 5% of the total cropped area. Total banana production is 774286 metric tons and total area is 119325 acres. Total production of green banana (as vegetable) is 144135 metric tons and total area is 25479 acres (BBS, 2013). Bangladesh exports Champa kola (English name- Apple Banana, scientific name-*Musa sapientum*) throughout year (Hortex Foundation, 2013). It is very important to produce banana more which helps growers to create profitability because banana is year round crop and it has many nutrients. In earlier period banana production was high and it had great market value, but it is now losing concern .It is necessary to keep attention to the banana production and have to try to hold our traditional significance. Banana is high valued crops, for that reason it is also a positive side to investigate banana cultivation and profitability.

## 2. Literature Review

The main purpose of this chapter is to review the available studies related to present research. In any research review of literature is essential; because it provides a scope for reviewing the stock of knowledge and information relevant to the proposed research. In the business literature of Bangladesh, there is little information on Banana value chain. The studies in Bangladesh and different countries of the world which have relevance to the present study, are reviewed here in brief.

Tadesse & Temesgen ( 2019) conducted a study and its aimed was to analyze the value chain of banana in Mizan-Aman town, Bench Maji zone. The study result exhibited also that banana producers are faced lack market, lack of cooperatives and low price of banana. The result revealed that banana passes through several intermediaries with little value being added before reaching the end users. The highest marketing cost is incurred by wholesalers and the highest market profit is shared by retailers. Improved infrastructure and strengthening the linkage/interaction among value chain actors is necessary for good marketing of banana, the study said.

Gebre (2016) assesses the sustainability performance of the banana value chain by comparing and discussing 25 attributes owing to different sustainability dimensions. The study found economic, social, and environmental indicators have moderate sustainability performance in the Arba Minch, Ethiopia.

Smallholder banana farmers depend almost entirely on fresh banana for their livelihoods in Uganda. The study discovered that innovative market access options were vital in improving market access but were underutilized. There was need to develop a specific banana value chain development strategic framework in order to tap up innovations among the value chain actors and promote their diffusion across key banana growing districts in Uganda, says Alex *et al.* (2015)

Ann & Ajjan (2014) conducted a study and it reveals that two banana value chains (BVC), are illustrated based on research conducted in South India in 2014. In both chains, most cash dealings between farmers and their buyers were completed through a relative/fixed pricing system. Farmers in BVC1 based their trust on traditional ethical values to secure banana supply in the villages. In BVC2, farmers' trust in their intermediary developed over time in their relationships and by making comparisons between the prices farmers received for their bananas.

Rietveld *et al.*, (2013) investigated a study that the value chain of banana beer and spirit is short and local, with most of these products being consumed in the locality. The bacterial disease *Xanthomonas wilt* has greatly affected the production of beer bananas. Improved linkages between non brewers and brewers and between brewers and markets could assure supply and increase prices, giving an incentive for both brewers and non-brewers to invest more in disease control and in quality production.

Mushroom was discovered to be a profitable agricultural business (22,888 taka per farm) by Barmon *et al.* . ( 2012). The gain cost ratio (BCR) was 1.55. The average family household income was roughly Tk. From 43,731. Usually, three intermediaries are involved in the distribution channels (mushroom office, wholesalers and distributors).

Ouma and Jagwe (2010) were investigated that Smallholder farmers in developing countries need to improve their position in food value chains. Value chain mappings and gross margin analysis were employed to assess constraints and opportunities for existing value chains for bananas in Central Africa. The results showed weak linkages within the banana value chains with poor integration of value chain actors. Collective marketing, penetration into high value chains and improved processing techniques may provide a potential avenue for enhancing banana value Chains.

The majority of studies deal with the banana production and value chain. Supply chain research is also of great significance to market participants and policy makers. Results of the study can help to identify the stakeholders of the Banana chain and their role in the marketing system. The current study is expected to serve as the basis for further studies in this almost untapped but profitable and potential area of the company.

### 3. Objectives

The specific objectives of the study are as follows:

- a) To identify the actors involved in value chain and their function in banana marketing;
- b) To calculate profitability of value chain actors;
- c) To identify the constraints of banana marketing and suggested measure for the improvement of banana marketing in the selected area.

### 4. Statement of the Problem

The economic growth of an agro-based country like Bangladesh mainly depends on the development of agriculture sector. The agro-climatic conditions of Bangladesh are suitable for the cultivation of a wide variety of crops but 80% of the gross cropped areas are at present confined to the production of cereal crops mainly rice. Bangladesh ranks 14th among the top 20 banana producing countries in the world. The country produces nearly 1.00 million tons of bananas annually (Hossain, 2016). It is also a nutritious fruit crop in the world and grown in many tropical areas where they are used both as a staple food and dietary supplements. Each year about 35,000 children become blind due to lack of Vitamin-A. The common deficient nutrients of Bangladesh are Vitamin-A and Vitamin-C, riboflavin, folic acid etc. Banana provides those nutrients. Banana is one of the high-calorie fruits and 100 grams of its flesh carries 90 calories. Besides, it contains a good amount of health benefiting fiber, anti-oxidants, minerals, and vitamins (Nutrition, 2017). In Bangladesh, banana is the only fruit crop, which is available throughout the year and consumption rate is also higher than any other fruits. The total cultivated area of horticultural crops is about 0.69 million hectare which is about 5% of the total cropped area. Total banana production is 774286 metric tons and total area is 119325 acres. Total production of green banana (as vegetable) is 144135 metric tons and total area is 25479 acres (BBS, 2013). It is very important to produce banana more which helps growers to create profitability because banana is year round crop and it has many nutrients. In earlier period banana production was high and it had great market value, but it is now losing concern. It is necessary to keep attention to the banana production and have to try to hold our traditional significance. Banana is high valued crops, for that reason it is also a positive side to investigate banana cultivation and profitability. The value chain was described and popularized by Michael Porter in his 1985 Best-Seller, *Competitive Advantage: Creating and Sustaining Superior Performance*. The value chain can be a very useful conceptual tool when trying to understand the factors that impact the long-term profitability of business and when developing a successful strategic plan for business. The value chain can be thought of as a set of activities, services, and products that lead to a product or service that reaches the final consumer.

The study is necessary for the following aspects-

- ❖ This research would give considerable significant as a source of information about banana production and its value chain.
- ❖ It would help in providing new idea and knowledge in the field of value chain of banana and be helpful to the farmers, researchers, government policy makers and others concerned.
- ❖ It would give particular emphasis on value chain of banana which could help to find out the ways for improving the efficiency in production.

### 5. Methodology of the Study

Methodology is the systemic steps of action which involves collection of reliable data from the selected sample farmers as per objectives of the research. It is an indispensable and integral part of any research. To a large degree, the reliability of every experimental study relies on the required methods.

**Selection of the study area:** On the basis of high concentration of Banana cultivation and production, Narsingdi district is considered as one of the leading banana producing zones in Bangladesh. Two upazilas namely Shibpur and Manohordi of Narsingdi district were selected.

**Selection of Banana:** Banana is an important fruit of Bangladesh widely grown. Many types of bananas are commercially produced by the farmers in the study area. These are BARI Kola-1, Amritsagar, Sabri, Champa and Kabri are the commercial cultivars. The other cultivars are Mehersagar, Dudsagar, Agniswar, Genasundari, Kanaibanshi, Basrai, Binisuta, etc. Among these cultivars Champa (Apple Banana) has been selected for this research work.

**Sampling technique:** Convenience Sampling is used for this study.

**Sample Size:** Thus total sample size was 30.

**Sources of Data:** The study is involved in collection of data both from the primary and secondary sources. Different types of data and their sources are discussed under the following heads:

**Primary Data:** Primary data from respondents were collected through face to face contact. During data collection the objectives of the study were clearly explained to the respondents.

**Secondary Data:** For the research purpose secondary data would also be collected from different sources like books, journals, newspaper, and document of BBS.

**Study Period:** Data would be collected by survey method with the help of pre-designed and pretested interview schedule during November 2017 to February 2018.

**Processing and analysis of data:** After collecting information, the filled up schedule were scrutinized and checked to avoid irrelevant information. The collected data were edited, coded and finally tabulated according to objectives of the study. In order to minimize error data were collected in local unit (e.g. acre) and later it was converted into standard unit. Finally, tabulated data are analyzed and condensed by using average, percentage and ratio. A list of relevant tables was prepared to obtain the result.

## 6. Results and Discussion

### Value Addition of Banana

Table 1: Value Addition of Banana by Farmer

Average Farmgate price (Tk. Per Bunch)	Market price (Tk. Per Bunch)	Average marketing cost (Tk. Per Bunch)	Marketing Margin (Tk. Per Bunch)	Value addition (%)
500	450	17	33	11.11

Source: Field Survey, 2018

### Cost and Margin Analysis of Faria

Faria mainly sold banana to the Bepari or arathdar. After collecting banana from the growers from the market they sold it directly to the end Bepari or arathdar. The estimated average marketing cost per bunch of banana incurred by the Faria was Tk. 30. Among the cost items transportation cost covered the highest cost representing 40.00 percent of total cost. The second highest cost item was wastage costs which was 33.33 percent of total cost. Among other cost items, loading and unloading was 13.33 and both market toll as well as personal expense cost were 6.67 percent (Table 2).

Table 2: Marketing Cost Incurred by Faria

Cost items	Cost (Tk./ Bunch)	Percentage
Transportation	12	40.00
Loading and unloading	4	13.33
Wastage	10	33.33
Market toll	2	6.67
Personal expense	2	6.67
Total	30	100.00

Source: Field Survey, 2018

The average purchase price per bunch of banana was Tk. 500 and sales price was Tk. 550 respectively. The amount of marketing margin per bunch of banana was Tk. 50. Among the value addition, Faria covered the 10.00 per cent of total value addition. The average marketing cost per bunch of banana was Tk. 30 (Table 3).

*Table 3: Value Addition and Marketing Margin of Banana Incurred by Faria*

Particulars	Tk. Per Chari
i. Purchase Price	500
ii. Sales Price	550
iii. Marketing Margin (ii-i)	50
iv. Marketing Cost	30
v. Net Marketing Margin (iii-iv)	20
vi. Value addition (%)	10.00

Source: Field Survey, 2018

### Cost and Margin Analysis of *Bepari*

*Bepari* mainly sold banana to the Arathdar and wholesale market. After collecting banana from the growers and Faria, they sold it directly to the Arathdar. The estimated marketing cost per bunch of banana incurred by the *Bepari* was Tk.43. Among the cost items transportation covered the highest cost representing 23.26 percent of total cost. The second highest cost item was wastage of banana which was 18.60 percent of total cost. Among other cost items, loading and unloading, salary & wages, Arathdari commission and storage cost were 11.63 percent, personal expense as well as tips and donation both were 4.65 percent and market toll was 2.32 percent (Table 4).

*Table 4: Marketing Cost Incurred by Bepari*

Cost item	Tk. Per Chari	Percentage
Transportation	10	23.26
Loading and unloading	5	11.63
Wastage	8	18.60
Salary and wages	5	11.63
Market toll	1	2.32
Personal expense	2	4.65
Arathdari commission	5	11.63
Tips and donation	2	4.65
Storage cost	5	11.63
Total	43	100

Source: Field Survey, 2018

The average purchase price per bunch of banana was Tk. 550 and sales price was Tk. 600. The amount of marketing margin per bunch of banana was Tk. 50. Among the value addition, *Bepari* covered the 9.09 per cent of total value addition. The average market cost per bunch of banana was Tk. 43 (Table 5).

*Table 5: Value Addition and Marketing Margin of Banana Incurred by Bepari*

Particulars	Tk. Per Bunch
i. Purchase Price	550
ii. Sales Price	600
iii. Marketing Margin (ii-i)	50
iv. Marketing Cost	43
v. Net Marketing Margin (iii-iv)	7
vi. Value addition (%)	9.09

Source: Field Survey, 2018

### Cost and Margin Analysis of Arathdar

Arathdar mainly sold banana to the local market wholesalers and district wholesale market. After collecting banana from the Faria and Bepari, they sold it directly to the end wholesaler. The estimated marketing cost per bunch of banana incurred by the Arathdar was Tk. 13. Among the cost items, Rent for storing covered the highest cost representing 30.77 percent of total cost. The second highest cost item was salary and wages of banana which was 23.08 percent of total cost. Among other cost items, personal expenses, Tax and miscellaneous cost represent 15.38 percent of total cost (Table 6).

Table 6: Marketing Cost Incurred by Arathdar

Cost items	Cost(Tk./Chari)	Percentage
Salary and Wages	3	23.08
Personal expense	2	15.38
Rent	4	30.77
Tax	2	15.38
Miscellaneous	2	15.38
Total	13	100.00

Source: Field Survey, 2018

The purchase price per bunch of banana was Tk. 600 and sales price was Tk. 615. The amount of marketing margin per bunch of banana was Tk. 15. Among the value addition, Arathdar covered the about 2.5 percent of total value addition. The marketing cost per bunch of banana was Tk. 13 (Table 7).

Table 7: Value Addition and Marketing Margin of Banana Incurred by Arathdar

Particulars	Tk. Per Bunch
i. Purchase Price	600
ii. Sales Price	615
iii. Marketing Margin (ii-i)	15
iv. Marketing Cost	13
v. Net Marketing Margin (iii-iv)	2
vi. Value addition (%)	2.5

Source: Field Survey, 2018

### Cost and Margin Analysis of Wholesaler

Wholesaler mainly sold banana to the distance wholesaler and retailers. After collecting banana from the Faria, Bepari and Arathdar sold it directly to the distances wholesale markets (Dhaka, Chittagong etc.) and retailers. The estimated marketing cost per bunch of banana incurred by the wholesaler was Tk.55. Among the cost items transportation covered the highest cost representing 27.27 percent of total marketing cost. The second highest cost item was wastage cost which was 21.82 percent of total marketing cost. Among other cost items, loading and unloading was 11 percent, personal expenses as well as salary and wages were 7.27, market toll as well as tips and donation were 1.82 percent, storage cost was 18.18 percent and tax was 3.64 percent (Table 8).

*Table 8: Marketing Cost Incurred by Wholesaler*

Cost item	Cost(Tk./ Bunch)	Percentage
Transportation	15	27.27
Loading and unloading	6	11
Salary and Wages	4	7.27
Market toll	1	1.82
Tips and donation	1	1.82
Storage	10	18.18
Wastage	12	21.82
Personal expense	4	7.27
Tax	2	3.64
Total	55	100.00

Source: Field Survey, 2018

The purchase price per bunch of banana was Tk. 615 and sales price was Tk.680. The amount of marketing margin per bunch of banana was Tk.65. Among the value addition, wholesaler covered the 10.57 per cent of total value addition. The marketing cost per bunch of banana was Tk. 55 (Table 9).

*Table 9: Value Addition and Marketing Margin of Banana Incurred by Wholesaler*

Particulars	Tk. Per Bunch
i. Purchase Price	615
ii. Sales Price	680
iii. Marketing Margin (ii-i)	65
iv. Marketing Cost	55
v. Net Marketing Margin (iii-iv)	10
vi. Value addition (%)	10.57

Source: Field Survey, 2018

### Cost and Margin Analysis of Retailer

Retailers mainly sold banana to the ultimate consumers. After collecting banana from the district wholesale market and they sold it directly to the end users. The estimated marketing cost per bunch of banana incurred by the retailers was Tk. 26. Among the cost items transportation and wastage covered the highest cost representing 38.46 percent of total marketing cost. The second highest cost item was personal expenses which accounted for 11.54 percent of total marketing cost. Among other cost items tax, market toll, tips & donation were 3.84 percent respectively (Table 10).

*Table 10: Marketing Cost Incurred by Retailer*

Cost items	Cost (Tk./ Bunch)	Percentage
Transportation	10	38.46
Market toll	1	3.86
Wastage	10	38.46
Personal expense	3	11.54
Tax	1	3.84
Tips and Donation	1	3.84
Total	26	100.00

Source: Field Survey, 2018

The purchase price per bunch of banana was Tk. 680 and sales price was Tk. 720. The amount of marketing margin per bunch of banana was Tk.40. Among the value addition, retailer covered the 5.88 percent of total value addition. The marketing cost per bunch of banana was Tk. 26 (Table 11).

Table 11: Value Addition and Marketing Margin of Banana Incurred by Retailer

Particulars	Tk. Per Bunch
i. Purchase price	680
ii. Sales price	720
iii. Marketing Margin (ii-i)	40
iv. Marketing cost	26
v. Net marketing margin (iii-iv)	14
vi. Value addition (%)	5.88

Source: Field Survey, 2018

### Share of Different Actors in Value Addition, Marketing Cost and Net Marketing Margin of Banana

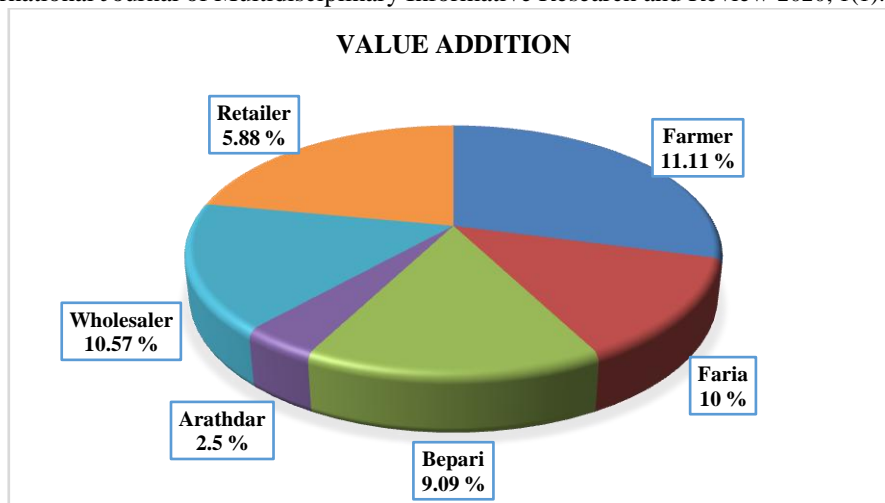
Table 12 described about the share of different actors in value addition, marketing cost and net marketing margin of banana marketing. According to the table, it is clear that farmers had the highest portion of value addition in the marketing chain of banana which was about 11.11 percent followed by wholesaler 10.57 percent of total value addition. The lowest portion of value addition was occurred by Arathdar which was about 2.5 percent of total value addition. In case of marketing cost, the highest proportion was incurred by wholesaler which was about 29.89 percent followed by Bepari 23.37 percent. In contrast, the lowest portion of marketing cost was incurred by Arathdar which was 7.07 percent of total marketing cost. Although farmers had the second lowest marketing cost of Banana, they had the highest proportion of net marketing margin which was about 38.37 percent of total net marketing margin. Faria had the second highest portion of net marketing margin of banana. On the contrary, Arathdar, incurring lowest marketing cost, had the lowest net marketing margin of banana which was only 2.33 percent of total net marketing margin of banana.

Table 12 : Value Addition, Marketing Cost and Net Marketing Margin of Different Market Actors of Banana

Actors	Value addition	Marketing cost		Net Marketing Margin	
	Percentage per Bunch	Tk. per Bunch	Percentage	Tk. per Bunch	Percentage
Farmer	11.11	17	9.24	33	38.37
Faria	10.00	30	16.30	20	23.26
Bepari	9.09	43	23.37	7	8.14
Arathdar	2.5	13	7.07	2	2.33
Wholesaler	10.57	55	29.89	10	11.63
Retailer	5.88	26	14.13	14	16.28
Total	49.15	184	100	86	100

Source: Field Survey, 2018





*Figure 1: Share of Different Actors in Value Addition of Banana*

Among the different actors, *Bepari* incurred highest percentage of marketing cost and earned fourth lowest net marketing margin; on the other hand, *Arathdar* earned lowest net marketing margin, although incurring lowest marketing cost.

*Table 13: Problems Faced By Actors in Value Chain*

Problem faced by producers	Percent	Rank
Inadequate good transport	80%	1
Inadequate marketing information	72%	2
Inadequate capital	68%	3
Inadequate market facilities	65%	4
Inadequate storage facilities	56%	5

Source: Field Survey, 2018

There are various marketing problem faced by value chain actors. Some major problems are discussed below. A large amount of marketing cost was incurred by traders while carrying their Banana to the desired places due to poor communication and transportation facilities. Table 13 shows that about 80 percent value chain actors reported poor communication and transportation facilities as a marketing problem of Banana. This is the top ranked marketing problem which is faced by the value chain actors and rests of the problems are displayed in the table 13.

## 7. Conclusion

Banana is extensively cultivated species in Shibpur and Manohordi of Narsingdi district. However, banana production was more profitable than any other fruit production. The management practice of based on the findings of the study it can be concluded apparently that considerable scope exists to increase the productivity of banana and to develop the value chain. Farmer engaged in banana production was not very solvent to make the full utilization of value chain opportunity. They faced huge problem to store banana for better price in the off season. Credit facilities should be made available at low interest rate by government.

Grading and standardization facilities should be utilized properly for efficient value chain of banana market. Lack of timely and proper market information was a great problem. So, market information should be available and ease accessible for the producers also for other value chain actors.

## 8. Recommendations

On the basis of the finding of the study it was evident that banana was profitable enterprises and they can generate income earnings and employment opportunity to the rural people of Bangladesh. But some problems and constraints bared to attain the above mentioned objectives. The policy makers should, therefore, take necessary measures. According to the findings of the study; some policy recommendations may be advanced which are likely to be useful for policy formulation.

On the basis of the findings of the study, the following specific recommendation may be made for the development of banana sector.

- a) As most of the banana farmers are technically efficient at present production technology, improved method of production technology with sufficient storage ability should be introduced.
- b) Operating capital is a problem for the resource poor farmers of the study area. Institutional credit program should be launched aiming at particularly the small and medium farmers. The commercial bank should be encouraged to provide loans at a low interest rate to enable farmers to operate their farming on commercial basis.
- c) As banana is profitable enterprise, government and concern institutions should provide adequate extension program to expand their area and production.
- d) To avoid price fluctuation, support price should be ensured to the farmers.
- e) Banana based cropping pattern should be developed and disseminated to those areas of Bangladesh where their production is suitable.
- f) Government should take necessary measures to lower the price of inputs which have positive significant impact on yield. It will increase the net benefit of banana producers.
- g) Banana farmers had to sell their product at low price during harvesting or just after harvest. An appropriate storage scheme should be developed so that the farmers are not forced to sell their product at low price in harvest period.
- h) Development of transportation system is essential for the improvement of trading and reducing cost of banana.
- i) Steps should be taken to ensure fair price, quality of product, floor price, and the stability of production.
- j) Market cost is high because of inadequate information, infrastructure, high price risk etc.

Moreover, a large number of people were involved in the production and marketing of banana. So, the farmers and intermediaries could be more benefited financially if production and marketing of banana were well expanded.

## 9. Limitations of the Study

There are some limitations of the study as the study conducted on the farmers and traders of the country through interview schedules.

- a) Most of the data collected through interview of the farmers and traders, so sometimes they were not well-cooperated with the interviewer.
- b) The information gathered mostly through the memories of the farmers and traders which were not always correct.
- c) In the resource and time constraints, broad and in-depth study got hampered to some extent.

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