



Farmer's Profitability of Banana Cultivation at Narsingdi District

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Abstract: *The present study was designed to measure production profitability 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 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. Demographic characteristics of banana farmers were categorized into age, education, farming experience, farm size and family size. 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. It was seen that gross return per bunch of banana was Tk. 450. Variable cost per Chari of banana was Tk. 62.35. Total cost per Chari of banana cultivation (with marketing) was Tk. 115.29. Gross margin was obtained by deducting total variable cost from gross return. Gross margin per Chari of banana was Tk. 387.65. Net return was estimated by subtracting total cost from gross return. Net return per Chari of banana was Tk. 334.65. The undiscounted benefit cost ratio (BCR) was found 3.90. In our study areas farmers faced many problems in the production of banana. The major problems faced by them included lack of availability of adequate input, higher input cost; lack of subsidy, inadequate capital, Lack of quality sucker was a major problem for banana cultivation. The Government should provide credit facilities through Bangladesh Krishi Bank (BKB) and other commercial banks. Adequate amount of inputs including HYV suckers should be supplied by the government at subsidized prices in the Banana producing areas. Transportation facilities should be improved in the study areas. Low cost storage facilities should be developed at the primary and secondary markets by the local Government authority.*

Keywords: *Value addition, HYV, Marketing margin, Commercial banks, BCR.*

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.

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.

Bairagi (1980) conducted a study to determine the profitability of banana production in Jhenaidah District of Bangladesh. He found that per hector costs and returns on banana production were taka 53714.50 and 116674.84 respectively.

Hoque (1983) conducted a research on some technological aspects for the commercial production of banana during the period from 1981 to 1983 at Bangladesh Agricultural University (BAU), Mymensingh, he reported that the best period of banana plantation was September to November. In another study by him reported that intercropping of banana were practiced during of period September to april, as the weather of this period remain favorable for large number of vegetables, oilseed and pulse crops.

Rahman and Akbar (1989) conducted a study on Banana marketing in Narsingdhi District. They reported that the farmer's share of the consumer's taka spent on bananas varied between 42 to 62%. The intermediaries appropriated a marketing margin of 38 to 56% from marketing cost and profit.

Nargis (1997) conducted a study on comparative economic analysis of growing banana and banana with other vegetables in some selected area of Muktagacha Thana. The major findings of the study were that per hectare costs of production of sole banana were taka 121438 and taka 92011, respectively considering full cost and cash cost.

Mudyazvivi and Maunze (2007) were conducted to evaluate the banana industry in Zimbabwe focusing on postharvest losses along the value chain (VC). Total postharvest losses for 2011-2012 were estimated to be 24-27 per cent of total production with a minimum economic loss of USD69,983/annum/firm, and a total loss of more than USD500,000/annum between the VCs analysed. The bulk of the losses occurred at farm level during handling and transportation. The major factors contributing to banana postharvest losses were: unreliable transport, poor communication and coordination between producers and processors; lack of or inefficient temperature management and poor sanitation.

Hanumantharaya *et al.* (2009) conducted a study based on data collected from 80 farmers in 12 villages of two taluks in Tungabhadra and Malaprabha command areas of Karnataka. Results of the study revealed that, in crop-I, per ha production cost of sucker banana was Rs. 82,298 and tissue culture banana was Rs. 1,17,563. The gross returns obtained were 1,60,113.81 and Rs. 1,97,295.94, respectively. The net returns obtained were Rs. 77,815.81 and Rs. 79,732.94, respectively. In crop-II, production cost of sucker banana was Rs. 55,073 and tissue culture banana was Rs. 57,561.30. The gross returns realised were Rs. 1,70,596.56 and Rs. 1,85,953.07, respectively and the net returns were Rs. 1,15,523.56 and Rs.1,28,391.77, respectively. In sucker banana cultivation, regression coefficient of plant nutrients (0.35) was significant at five per cent and that of plant protection chemicals and bullock labor were non-significant.

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 determine the socio-demographic characteristics of producers.
- b) To calculate profitability of banana producers and value chain actors.
- c) To identify the constraints of banana production and suggested measure for the improvement of banana production 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 study is necessary for the following aspects-

- ❖ This research would give considerable significant as a source of information about banana production and profitability.
- ❖ It would help in providing new idea and knowledge in the field of production and profitability of banana and be helpful to the farmers, researchers, government policy makers and others concerned.
- ❖ It would give particular emphasis on production and profitability 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

The socio- demographic background and characteristics of the farmer's influences the productions to a great extend. So, a description of the characteristics of farmer is necessary for analyzing the main objective of the present study. Socio-economic characteristics of the farmer's included their age, family size, educational status, farm size, farming experience of the respondent. These are described below:

Table 1: Distribution of the Banana farmers according to their age

Age Categories	Banana Farmers	
	Number	%
Young (20-35 Years)	16	53.3
Middle (35-50 Years)	7	23.3
Old (Above 50 Years)	7	23.3
Total	30	100

Source: Field survey, 2018

Table 1: Shows that age of the banana farmers ranged from 20 to above 50 years. Banana farmers were classified into three categories on the basis of their age. Young farmers are mostly engaged in Banana cultivation.

Table 2 : Distribution of the Banana farmers according to their education

Education Categories	Banana Farmers	
	Number	%
Illiterate	16	53.3
Primary	5	16.7
Secondary	4	13.3
Higher Secondary	5	16.7
Total	30	100

Source: Field survey, 2018

Table 2: Shows that maximum farmers (53.3 %) are illiterate while primary & higher secondary have same (16.7 %). Farmers having secondary education are (13.3%). Banana farmers were classified into four categories on the basis of their education. Illiterate farmers are mostly engaged in Banana cultivation.

Table 3: Distribution of the Banana farmers according to their Family size

Family Size	Banana Farmers	
	Number	%
Small (1-4)	8	26.7
Medium (5-6)	13	43.3
Large (Above 7)	9	30
Total	30	100

Source: Field survey, 2018

Table 3: Shows that Family size of the Banana farmers of the study ranged from 1 to above 7 persons. Banana farmers were classified into three categories on the basis of their family size. Banana farmers having medium family size (43.3%) are interest in Banana cultivation.

Table 4: Distribution of the Banana farmers according to their Farm size

Family Size	Banana Farmers	
	Number	%
Small(0.01-0.33 Acre)	10	33.33
Medium(0.34-1.0 Acre)	10	33.33
Large (Above 7 Acre)	10	33.33
Total	30	100

Source: Field survey, 2018

Table 4: Shows that Banana farmer were classified into three categories on the basis of their farm size. All Banana farmers were belonging to same percentage (33.33%).

Table 5: Distribution of the Banana farmers according to their Farming experience

Faming Experience	Banana Farmers	
	Number	%
1 – 10 Years	16	53.3
10 - 20 Years	12	40
Above 20 Years	2	6.7
Total	30	100

Source: Field survey, 2018

In Table 5: Farming experience of a respondent was determined on the basis of involvement in the farming activities related to agriculture. Banana farmers ranged from 2 to above 20 years. Banana farmers were classified into three categories on the basis of their Farming experience. Highest portion of the Banana farmers (53.3 %) had low farming experience (1 - 10).

Table 6: Production Cost of Banana Per Acre

Items of Cost	Cost (Tk.)
Land preparation	6000
Human labor	18000
Sucker	9000
Cowdung	5000
Fertilizer (Urea/TSP/MOP)	8000
Cost of Insecticides/Pesticides	1000
Cost of Irrigation	6000
A. Total Variable Cost (TVC)	53000
Interest on operating capital @ of 12% for 12 months	6360
Rental value of land	45000
B. Total Fixed Cost (TFC)	51360
C. Total Production cost (A+B)	98000
Amount Chari per Acre (Nos)	850
Selling Price of Per Chari at farm yard	450
D. Total Revenue	382500
Net Profit margin(D-C)	284500
Benefit Cost Ratio (BCR)	3.90

Source: Field survey, 2018

Table 6: shows that the prevailing wage rate in the market for hired labor was considered as the opportunity cost of family supplied labor and in the study area wage rate was TK. 500 per man-day. The average human labor cost was estimated Tk. 18000 per acre of banana production. The average cost of land preparation was found Tk. 6000 for banana production per acre. The sucker cost of banana was found Tk. 9000 per acre of banana production. In the study area farmer used Cowdung and Fertilizer (Urea, T.S.P, MoP) for banana production and costs were estimated at the rate of prevailing market price and were found Tk. 5000 and Tk. 8000 per acre of banana production respectively. Total cost of irrigation per acre of banana production per year was found Tk. 6000. Insecticides/pesticides for banana were found Tk. 1000 per acre of banana production. Land use cost was estimated for the cropping period covering almost 12 month period as per the prevailing rate in the study area. In the study area the land use cost per acre was Tk. 45000 for banana production. The estimated cost for banana production was Tk. 6360. The cost on operating capital was calculated at the rate of 12 per cent per annum.

Table 7: Profitability of Banana Farmer

Particulars	Tk. Per Chari
i. Gross return	450
ii. Variable cost	62.35
iii. Total cost	115.29
iv. Gross margin (i-ii)	387.65
v. Net return (i-iii)	334.65
vi. BCR (i/iii)	3.90

Source: Field survey, 2018

Table 7: shows that Gross return was calculated by multiplying the total amounts of products by sales price. It was seen that gross return per bunch of banana was Tk. 450. Variable cost per Chari of banana was Tk. 62.35. Total cost per Chari of banana cultivation (with marketing) was Tk. 115.29. Gross margin was obtained by deducting total variable cost from gross return. Gross margin per Chari of banana was Tk. 387.65. Net return was estimated by subtracting total cost from gross return. Net return per Chari of banana was Tk. 334.65. The undiscounted benefit cost ratio (BCR) was found 3.90.

Table: 8 Production Problem Faced by Farmers in Production of Banana

Problem faced by producers	Percent	Rank
Lack of availability of adequate inputs	94%	1
Higher input cost	91%	2
Lack of subsidy	87%	3
Inadequate capital	80%	4
Lack of quality sucker	75%	5

Source: Field Survey, 2018

Table: 8 displayed that farmers our study areas faced many problems in the production of banana. The major problems faced by them included lack of availability of adequate input, higher input cost; lack of subsidy, inadequate capital, Lack of quality sucker was a major problem for banana cultivation.

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. Expanded banana cultivation can upgrade the living standard of the function areas of value chain. Banana enterprise in the study area was not found efficient enough. Despite of some limitations, the findings of the study confirm that the farmers can obtain positive net return from cultivation of banana. In the context of income generation and poverty alleviation, production of crop like banana may play a crucial role in meeting the cash needs of the farmers. The findings of the study also revealed that the trading of banana is a profitable venture to different intermediaries. The profit of retailers was higher than that of other intermediaries and the profit was found reasonable.

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.

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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