An economic contribution of banana at Narsingdi district of Bangladesh

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Chapter 1

Introduction

Bangladesh is agricultural country. Most of the people are depends on agriculturedirectly 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 2015-16 (BBS, 2016). 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 to 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. Eve was said to have used banana leaves to cover the modesty in the Garden of Paradise as revealed from antiquity. Banana is thus called “Apple of Paradise”. It is also known as “Adam Fig” (International tropical fruits network, 2016). In Asian and Pacific regions, banana has great socio economic significance. The name "banana" comes from an Arabic word meaning "finger” (BananaLink, 2016). 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, 2014). 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 yearabout 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.

Major Districts of cultivated Banana are Narsingdi, Gazipur, Rangpur, Bogra, Nator, Pabna, Noakhali, Faridpur, Khulna in our country. Districts of wild grown Banana are Sylhet, Moulvibazar, Netrokona, Rangamati, Khagrachhari, Bandarban. Generally banana plants are

found throughout the country in most of the rural homesteads. There are a number of banana cultivars in Bangladesh. Among them, BARI Kola-1, Amritsagar, Sabri, Champa and Kabri are the commercial cultivars. The other cultivars are Mehersagar, Dudsagar, Agniswar, Genasundari, Kanaibanshi, Basrai, Binisuta, etc. (Mukul *et al.*,2013).

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 possitive side to investigate banana cultivation and profitability.

The study is necessary for the following aspects.

- ✓ The study would give considerable significant as a source of information about banana production and profitability.
- ✓ This study 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.
- ✓ The study would give particular emphasis on production and profitability of banana which could help to find out the ways for improving the efficiency in production.

Objectives of the Study

The seminar paper has been prepared with the following objectives:

- ➢ To highlight the present status of banana production & socio-economic status of banana growing farmers in Bangladesh
- ➢ To review the production cost and profitability of banana in Bangladesh
- ➢ To identify the problems of banana growing farmers and offer suggestions for possible improvement in the existing situation

Chapter 2

Materials and methods

This seminar paper is exclusively a review paper, so all of the information has been collected from the secondary sources. During preparation of this paper, I went through various relevant books, journals, proceedings, reports, publications etc. Findings related to my topic have been reviewed with the help of the library facilities of Bangabandhu Sheikh MujiburRahman Agricultural University (BSMRAU). Information has also collected from Department of Agricultural Economics, BSMRAU. I have also searched related internet websites to collect information. All the latest information regarding production and profitability of Banana in Bangladesh has been collected from some published and unpublished research papers and especially from BBS (Bangladesh Bureau of Statistics). I got valuable suggestions and information from my major professor and course instructors. After collecting all the available information, I myself compiled and prepared this seminar paper.

Chapter 3

Review of findings

3.1 Present status of banana production in Bangladesh

Bangladesh is ranked 30th among banana-producing countries in terms of banana production (Promusa, 2017).

Major Districts of cultivated Banana: Bogra, Narsingdi, Rangpur, Nator, Pabna, Noakhali, Faridpur, Khulna.

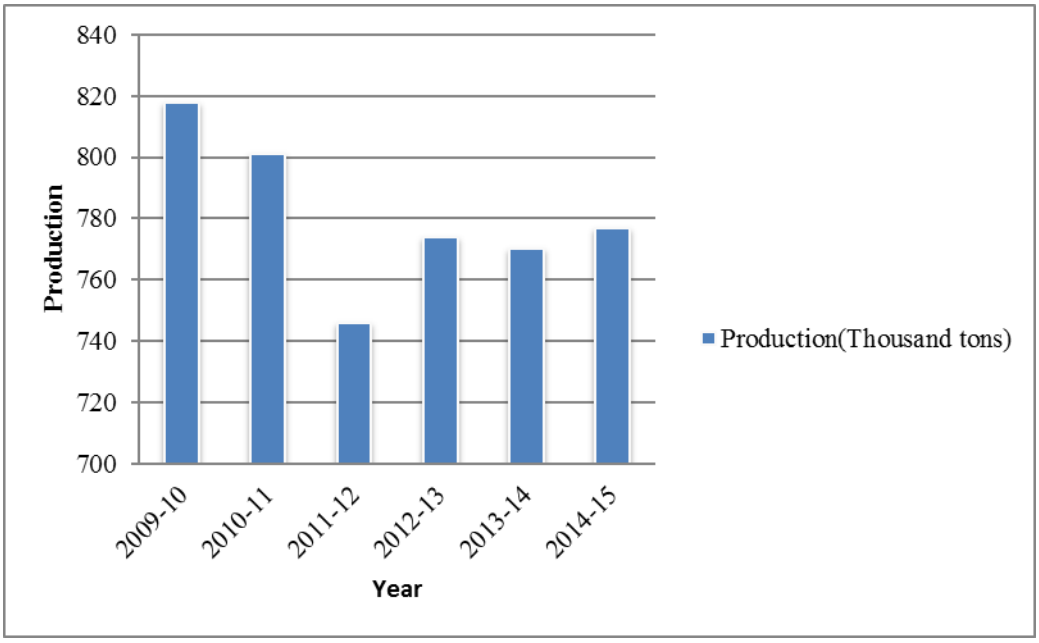
Districts of wild grown Banana: Sylhet, Moulvibazar, Netrokona, Rangamati, Khagrachori, Bandarban. Generally banana plants are found throughout the country in most of the rural homesteads.

Table 1: Area under banana production in Bangladesh, 2009-10 to 2014-15

Year	Area(acres)
2009-10	133305
2010-11	130589
2011-12	121718
2012-13	119325
2013-14	114669
2014-15	115434

Source: (Yearbook of Agricultural Statistics, 2013, 2015)

From table 1 it is seen that, year by year (2009-10 to 2013-13) area under banana production in Bangladesh gradually decreased. In 2014-15, it is slightly increased.



Source: (Agriculture Wing, BBS, 2015)

Figure 1: Yearwise production of banana in Bangladesh, 2009-10 to 2014-15

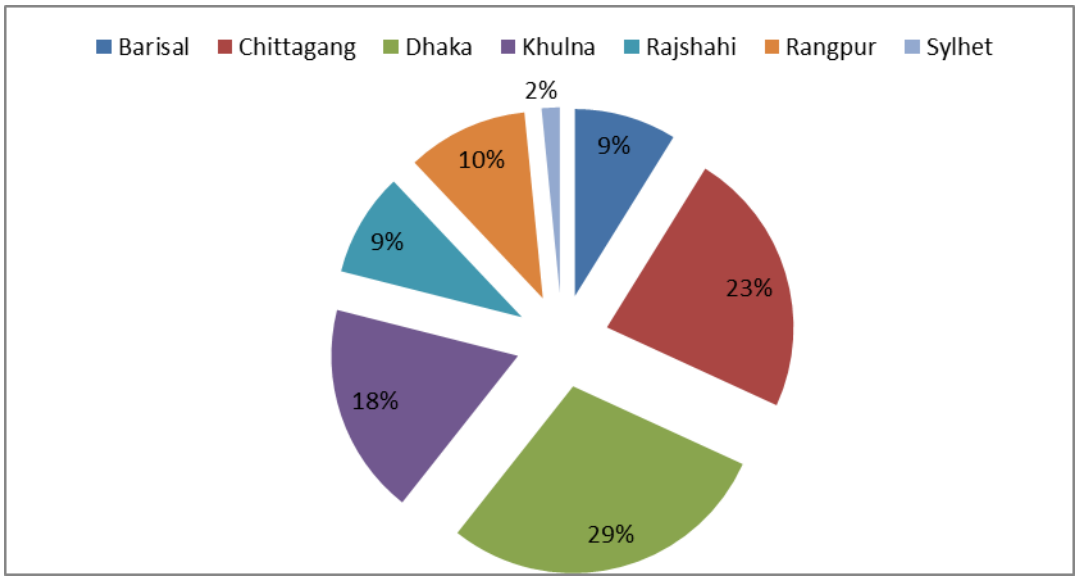
From the above figure 1, it reveals that production of banana in Bangladesh is highest in 2009-10 and lowest 2011-12.

Table 2: Area and production of banana in Bangladesh by division, 2013-14 to 2014-15

Division	**2013-14**			**2014-15**		
	Area(acres)	Yield per acre(Kg)	Production (MT)	Area(acres)	Yield per acre(Kg)	Production (MT)
Barisal	10024	2796	28029	10210	2879	29394
Chittagang	26300	4381	115226	26540	4455	118232
Dhaka	32932	6757	222535	33259	6734	223979
Khulna	21145	8229	174012	21133	8227	173857
Rajshahi	10342	8743	90422	10369	8814	91389
Rangpur	12457	11094	138196	12106	11395	137943
Sylhet	1469	1295	1903	1817	1449	2633

Source: (Yearbook of Agricultural Statistics, 2015)

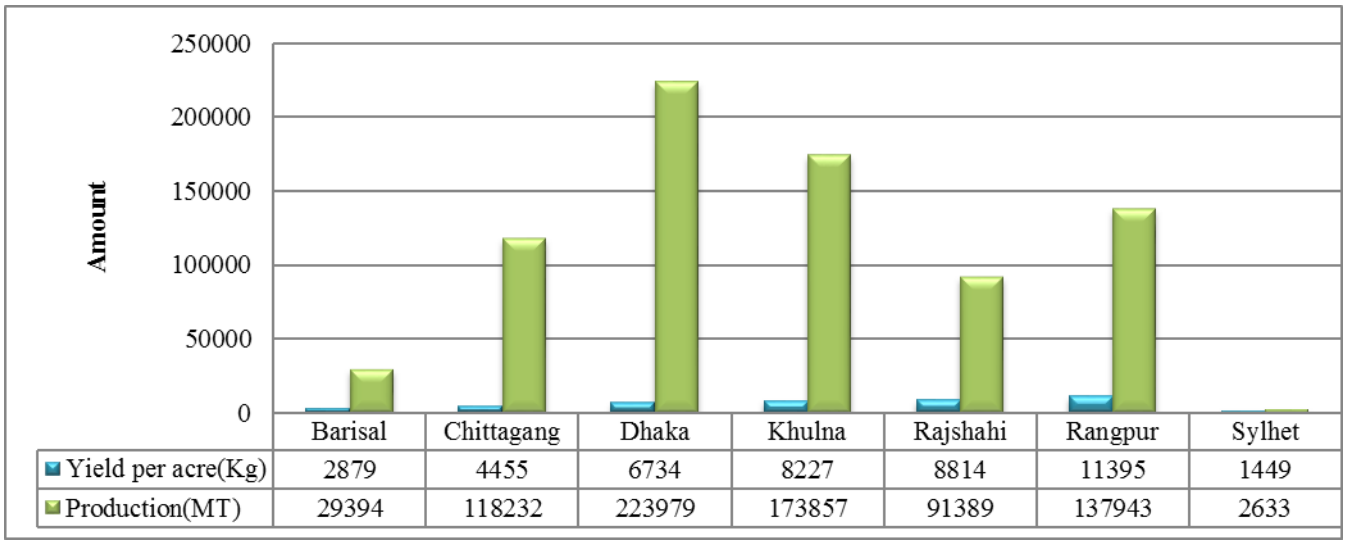
In table 2, it shows that Dhaka division provides highest part of banana production and lowest banana production area is Sylhet in the year of 2013-14 to 2014-15.



Source: (Yearbook of Agricultural Statistics, 2015)

Figure 2: Area under banana production in Bangladesh by division, 2014-15

From figure 2, it is clear that major area is Dhaka and small area is Sylhet for banana production in Bangladesh in 2014-15.

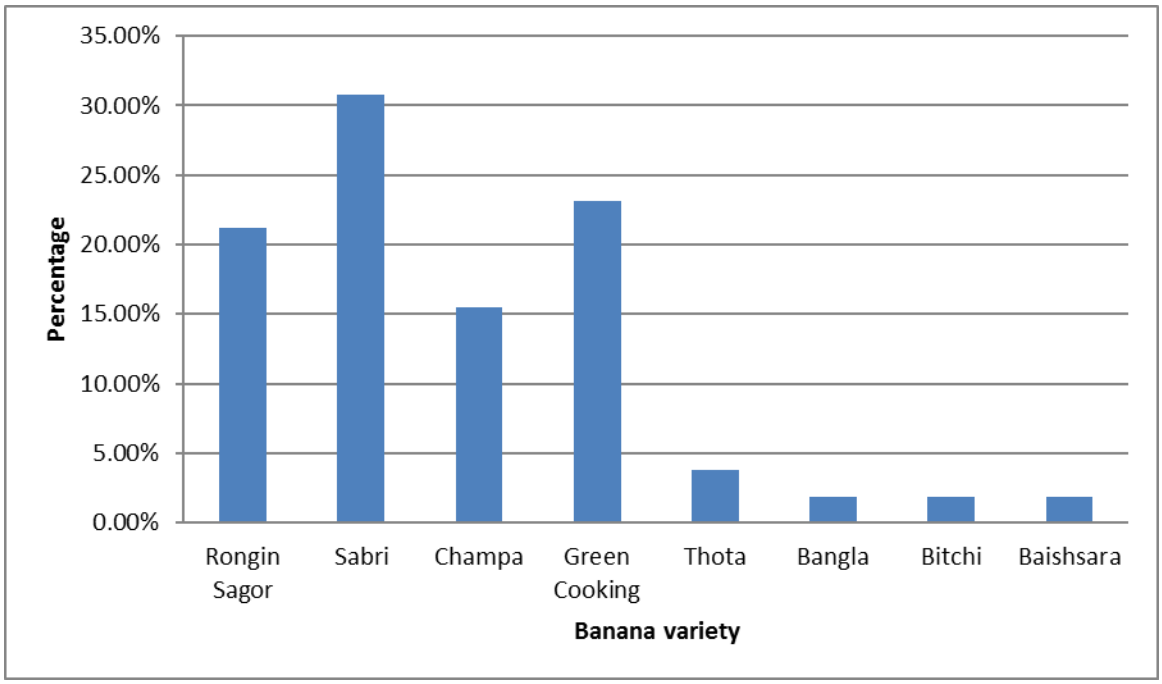


	Barisal	Chittagang	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet
Yield per acre(Kg)	2879	4455	6734	8227	8814	11395	1449
Production(MT)	29394	118232	223979	173857	91389	137943	2633

Source: (Yearbook of Agricultural Statistics, 2015)

Figure 3: Banana production in Bangladesh by division, 2014-15

In 2014-15, production of banana is highest in Dhaka and lowest in Sylhet. Yield per acre(Kg) is highest in Rangpur and lowest in Sylhet.



Source: (Fonsah *et al.*, 2017)

Figure 4: Variety of banana cultivated

The most popular variety of banana cultivated was Sabri-kola (30.8%), with 21.2% cultivating RonginSagor-kola and 15.4% cultivating Champa-kola. Additionally, 23.1% cultivated green or cooking bananas. Less-cultivated varieties were Thota-kola (3.8%) and Bangla-kola, Bitchi-kola, and Baishara-kola (1.9% each) (Figure 4).

3.2 Socio-economic characteristics of the banana growers

The study represents a brief description of the socio-economic characteristics of the banana growers that are selected. Decision making behavior of individual person is determined to a large extent by his socio-economic characteristics. Socio-economic environment also largely determines the nature and extent of participation of people in national development programs. There are many socio-economic variables of the banana growers. These are given below.

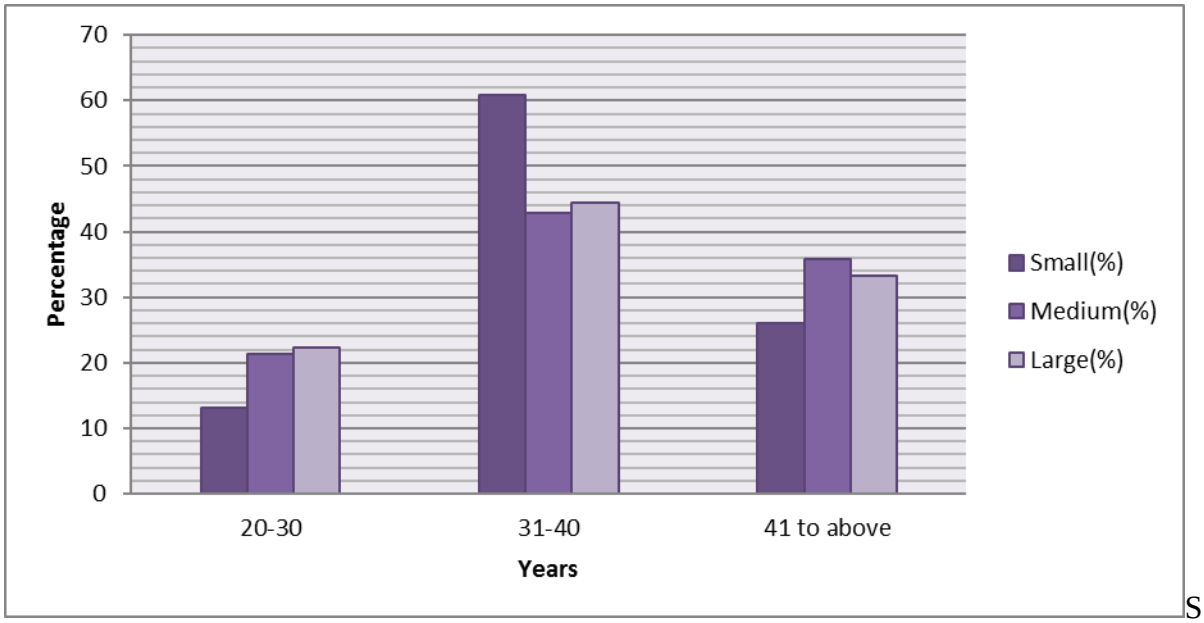
3.2.1 Distribution of banana growers by age

Age distribution of the selected banana growers is presented in Table 3. It shows that the highest number of banana growers (60.87 %) belonged to the age group 31-40 years for small farm while medium farm and large farm represent 42.86 and 44.44 % respectively. The table also indicates that the lowest number of banana growers belonged to the age group 20-30 years (18.33 %) while the highest proportion represents 31-40 years (50.90%).

Table 3: Age distribution of banana growers

Age of group (Years)	Small		Medium		Large		All	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
20-30	3	13.04	6	21.42	2	22.22	11	18.33
31-40	14	60.87	12	42.86	4	44.44	30	50.93
41 to above	6	26.09	10	35.72	3	33.34	19	31.67
Total	23	100	28	100	9	100	60	100

Source: (Kamal *et al.*, 2016)



Source: (Kamal *et al.*, 2016)

Figure 5: Age distribution of the selected banana growers

From the above figure we can say that, for small farm highest number of banana growers belonged to the age group 31-40 years.

3.2.2 Education Level of the banana growers

The educational status of the banana growers were classified into (a) Illiterate (b) Primary (c) Secondary up to SSC (d) HSC up to above. The educational status of the selected banana growers is presented in Table 4. The table shows that most of the banana growers were not well educated. It can be seen from the table that percentage of illiterate groups were 21.73 and 28.57 for the small and medium farms respectively. There were no illiterate banana growers in the large farm category. percentage of farms were 26.09, 17.86 and 33.33 % attending primary and 43.48, 42.85 and 44.44 % having secondary level and 8.7, 10.72 and 22.23 % attending up to HSC and above level of education for small, medium and large farm size categories respectively. Taking all farms 12.67 % banana growers were illiterate and 23.33 % had up to primary level of education, 43.33 % had education level up to SSC and 11.67 % of the total sample had level of education up to HSC and above.

Table 4: Education status of the banana growers

Literacy status	**Small**		**Medium**		**Large**		**All**	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Illiterate	5	21.73	8	28.57	0	0	13	12.67
Primary	6	26.09	5	17.86	3	33.33	14	23.33
Secondary up to SSC	10	43.48	12	24.85	4	44.44	26	43.33
HSC up to above	2	8.70	3	10.72	3	22.23	7	11.67
Total	23	100	28	100	9	100	60	100

Source: (Kamal *et al.*, 2016)

3.2.3 Occupation of the banana growers

The occupation from which lion's share of the income is earned irrespective of time and labor devoted to it has been termed as the main occupation of the respondents in the present study. Agriculture was found to be the inherent and single major occupation of almost all the farmers during the study period. A bulk of the total labor force was engaged in agriculture. Only a small proportion of the farm families were found to have dealt with business, service and other occupation in addition to agriculture in the study area. About 62 % of all banana growers dealt singly with agriculture which is their main occupation, 13 % dealt with agriculture cum service, 16.67 % with agriculture cum business and only 8.33 % dealt with agriculture cum other occupation (Table 5)

Table 5: Occupational status of banana growers

Particulars	**Small**		**Medium**		**Large**		**All**	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Agriculture	17	73.91	16	57.14	4	44.45	37	61.67
Agriculture cum service	2	8.70	4	14.29	2	22.22	8	13.33
Agriculture cum business	3	13.04	5	17.85	2	22.22	10	16.67
Agriculture cum others	1	4.35	3	10.72	1	11.11	5	8.33
Total	23	100	28	100	9	100	60	100

Source: (Kamal *et al.*, 2016)

3.2.4 Average family size and composition

Family size (or family members) in this study has been defined as total number of persons living together and taking meal from the same kitchen under the administration of the same head of the family. The family member includes husband, wife, son, daughter, brother, father and mother. Again a person, who has been employed for household work of a family, for example, servant was not considered as the family members in the study. If appears from Table 6 that maximum family members belonged to the age group 14 to 59 years for all farms. The average family size of the banana growers comprised 6.78, 4.71, 6.67 and 5.08 for the small, medium, large and all farms respectively during the year.

Table 6: Average family size and composition of family members

Age group (year)	Particulars	Small		Medium		Large		All	
		No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Below 14	**Male**	27	50.94	16	55.17	8	47.06	51	51.52
	Female	26	49.06	13	44.83	9	52.94	48	48.48
	All	53	100	29	100	17	100	99	100
14-59	**Male**	68	75.56	59	67.04	23	60.53	150	69.44
	Female	22	24.44	29	32.96	15	39.47	66	30.56
	All	90	100	88	100	38	100	216	100
59 and above	**Male**	7	53.85	8	53.33	3	60	18	54.55
	Female	6	46.15	7	46.67	2	40	15	45.45
	All	13	100	15	100	5	100	33	100
Average family size		6.78		4.71		6.67		5.80	

Source: (Kamal *et al.*, 2016)

3.2.5 Distribution of family members by literacy

The study showed that maximum members were received primary level education which was 43.43%, 41.25% and 41.50% for the small, medium and large farms respectively (Table 7). Taking all farms together, 42.24 % of the family members have up to primary level of education, 30.75% have up to SSC and only 3.45% have HSC and above level of education. If also indicates that 25.00%, 16.98% and 20.01% of the total family members were illiterate having no formal education for small, medium and large farms respectively.

Table 7: Occupational status of banana growers

Literacy status	Small		Medium		Large		All	
	No.	%	No.	%	No.	%	No.	%
Children below 6 years	4	2.63	5	3.5	3	5.66	12	3.45
Illiteracy	38	25	23	16.08	9	16.98	70	2.01
Primary	66	43.43	59	41.25	22	41.50	147	42.24
Secondary up to SSC	40	26.31	50	36.97	17	32.07	107	30.75
HSC up to above	4	2.63	6	4.20	2	3.78	12	3.45
Total	152	100	143	100	53	100	348	100

Source: (Kamal *et al.,* 2016)

3.2.6 Average size of land holding of the respondent households

In the present study, land ownership was classified into different categories i.e., cultivated own land, land rented in, land rented out, land mortgaged in, land mortgaged out, pond and homestead area. Average farm sizes of small, medium and large farms were 83.24, 223.82 and 404.59 decimals respectively with overall average being 237.29 decimal. Average farm size was calculated as:

Average farm size= Own land in cultivation + Rented in land + Mortgaged in land-Rented out land –Mortgaged out land.

Table 8: Average land holding of farm families (decimal)

Land type	Small		Medium		Large		All	
	Area	**%**	**Area**	**%**	**Area**	**%**	**Area**	**%**
Homestead area	6.5	6.31	8.99	3.69	9.69	2.09	8.38	3.10
Pond	1.96	1.90	2.18	0.89	3.42	0.74	2.52	0.93
Garden	1.85	1.80	1.92	0.79	3.12	0.67	2.29	0.85
Own land in cultivation	57.75	56.10	190	78.08	392.7	84.85	213.50	79.16
Rented in	30.21	29.34	26.27	10.79	27.61	5.96	28.03	10.39
Rented out	00	00	00	00	15.75	3.40	5.25	1.95
Mortgage in	00	00	10.75	4.42	5.25	1.13	5.33	1.98
Mortgage in	4.68	4.55	3.2	1.31	5.29	1.14	4.32	1.60
Total land	102.95	100	243.31	100	462.9	100	269.71	100
Average farm size	83.28		223.82		404.59		237.29	

Source: (Kamal *et al.,* 2016)

3.2.7 Average annual income of the respondent households

Income is the most important indicator of the socio-economic status of the people living in rural areas of Bangladesh. Average annual income of the respondent households has been estimated from the earnings of all active members of the family from various income generating activities during the study period.

Table 9 shows the average annual income of different farm categories of the banana growers. It is evident from the table that the overall average annual income for all farms was Tk. 55,414.7. About 40 % of all income was earned from non-farm sources. Banana farming contributes 35.32 % to the annual income and other farming operations contributed 24.44 %. Average annual income also displayed a positive relation with the farm size. Banana cultivation provides a very good insure base. Thus, it is a great source of the income of the selected borrowers in the area.

Table 9: Average annual household income of the respondents

Farm type	Average annual income							
	Banana growing		Farm income		Non-farm income		Total	
	Tk.	%	Tk.	%	Tk.	%	Tk.	%
Small	15821.80	23.17	12538.30	25.50	20816.21	42.33	49176.31	100
Medium	17650.23	31.99	14835.30	26.89	22683.36	44.11	55168.89	100
Large	25238.59	40.77	13251.69	21.40	23408.62	37.81	61898.9	100
All	19570.20	35.32	13541.76	24.44	22302.73	40.25	55414.7	100

Source: (Kamal *et al.,* 2016)

3.3 Production cost and relative profitability

Table 10: Analysis of cost, returns and benefit cost ratio (BCR) of banana production by wholesalers

Items	Wholesaler (Tk. /Chari.)
a) Buy	182.50
b) Transport	12.12
c) Others	5
d) Total cost[a + b + c]	195.62
e) Return	254.70
f) By product	0.00
g) Total return [e + f]	254.70
h) Profit[g - d]	59.08
i) Benefit cost ratio (BCR) [g / d]	1.30

Source: (Mukul and Rahman, 2013)

From this table 10, it is observed that, on an average wholesalers buy banana from producers Tk. 182.50 per Chari. Total cost from wholesaler side was Tk. 195.62 where the share of transport cost was Tk. 12.12 per Chari and others that means personal expenses, security, electricity bill, mobile bill etc was average Tk. 5 per Chari. Total revenue from this sector was Tk. 254.70 per Chari, surprisingly in banana production there is noincome from by

product. So, total profit was on an average Tk. 59.08 per Chari and Benefit Cost Ratio (BCR) was 1.30.

Table 11: Analysis of cost, returns and benefit cost ratio (BCR) of banana production by retailers

Items	Wholesaler (Tk. /Chari.)
a) Buy	262.68
b) Transport	18.00
c) Others	12
d) Total cost[a + b + c]	292.68
e) Return	415.35
f) By product	0.00
g) Total return [e + f]	415.35
h) Profit[g - d]	122.67
i) Benefit cost ratio (BCR) [g / d]	1.41

Source: (Mukul and Rahman, 2013)

From this table 11, we observed that, on an average retailer buy banana from wholesalers Tk. 262.68 Per Chari. Total cost from retailer side was Tk. 292.68 where the share of transport cost was Tk. 18.00 per Chari and others that mean personal expenses, security, electricity bill, mobile bill etc was average Tk. 12 per Chari. Total revenue from this sector was Tk. 415.35 per Chari, surprisingly in banana production there is no income from by product. So, total profit was on an average Tk. 122.67 per Chari and Benefit Cost Ratio (BCR) was 1.41.

Table 12: Parametric estimation of Cobb-Douglas production function

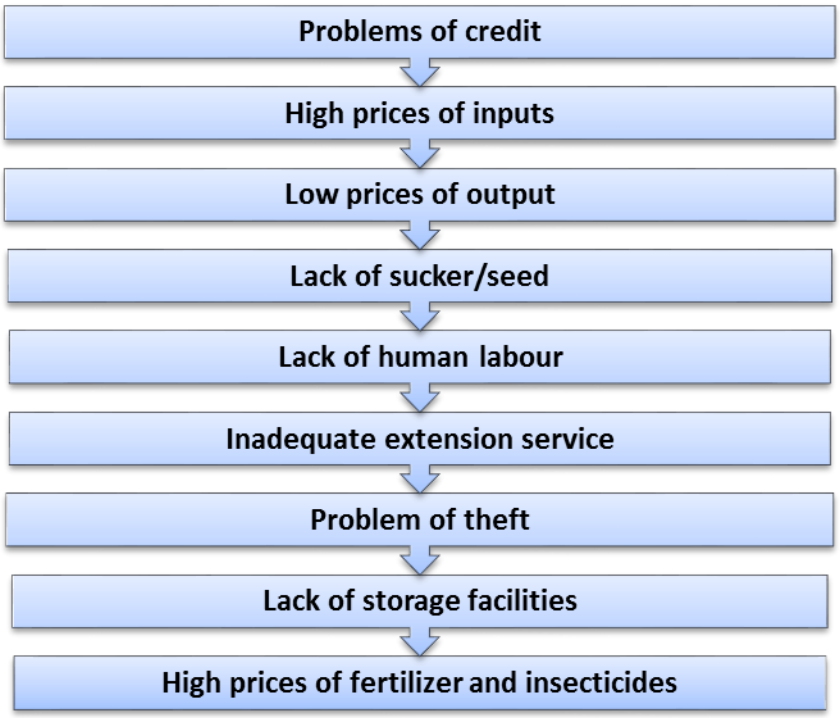
Explanatory Variables	Coefficient	SE
Intercept	-1.834	5.441
Cost of Land preparation(Mechanical power) (X1)	0.98**	0.327
Cost of Sucker (X2)	1.21**	0.231
Cost of Fertilizer(X3)	0.75	0.354
Cost of Insecticides / pesticides(X4)	0.63**	0.265
Cost of Irrigation(X5)	-0.18	0.232
Cost of Labor (X6)	-0.65**	0.174
R Square	0.82	
F-Value	9.56	

** indicates 5 % level of significance Source: (Mukul and Rahman, 2013)

From the table 12, The co-efficient of multiple determinations R^2 was 0.82 for banana producers. The value of R^2 means that the explanatory variables explained 82% of the variation in banana production. In case of banana producers, the result show that the co-efficient of human labor, sucker, insecticides and land preparation (Mechanical power) was significant at 5% level. This implies that the variation in banana production mostly depends upon the explanatory variables included in the model. The value of the production co-efficient for human labor was -0.65 for banana. The estimated co-efficient -0.65 revealed that 1% increase in human labor in the pre-harvesting period with other factors remaining constant, would decrease the gross return by 0.65% up to certain level. The value of production co-efficient for sucker was 1.21 for banana. The estimated co-efficient 1.21 revealed that 1% increase in sucker in the pre-harvesting period with other factors remaining constant, would increase the gross return by 1.21% up to certain level. The value of production co-efficient for Fertilizer was 0.75 for banana. The estimated co-efficient revealed that 1% increase in fertilizer in the pre-harvesting period with other factors remaining constant, would increase the gross return by 0.75% up to certain level. The value of production co-efficient for TSP was 0.63 for banana. The estimated co-efficient revealed that 1% increase in insecticides / pesticides in the pre-harvesting period with other factors remaining constant, would increase the gross return by 0.63% up to certain level.

3.4 Problems of the banana growers

Banana is a year round field crop. During the period, the banana growers faced several problems. The most burning problems of growing banana that the farmers have usually been facing are summarized and briefly discussed in this chapter. In this chapter an attempt has been made to identify some major problems of banana production as reported by the farmers growing banana in the study villages.



Source: (Parvin *et al.*, 2013)

Figure 6: Problems faced by banana growers

3.4.1 Problems of credit

Credit poses the most important constraint in banana production. The various kinds of problems in relation to credit faced by the respondents in the study area are as follows:

3.4.1.1 Non-availability of credit

Non-availability of credit is always a limiting factor to banana growers. About 27 % of the banana growers in the study area reported that they had problems in obtaining bank loans.

3.4.1.2 Insufficiency

Some of the growers complained that amount of bank loan received was not sufficient to cover the production expenses. About 17 % of the respondents reported inadequacy of banana loan has been the problem for timely completion of production practices to obtain better yield and thereby higher income.

3.4.1.3 High interest rate and loan transaction cost

In the study area, about 60 % of the banana growers reported that high interest rate charged on loan specially by the village samity was also a problem to have loan for banana cultivation. For institutions, the occurrence of loan transaction cost other than formal interest rate stood as an additional burden for the borrowers which might have enhanced effective rate of interest even sometimes more than those of informal sources of credit.

3.4.2 Low prices of output

The farmers of Bangladesh are not well organized. They usually do not get competitive prices for their product. About 80 % of banana growers sold their products at low prices.

3.4.3 High prices of inputs

Some key inputs like fertilizer, manure, sucker, human labour and insecticides are important factors for banana cultivation. In the study area about 65 % of banana growers thought that the existing prices of these inputs for the selected enterprises were quite high for them.

3.4.4 Lack of human labour Since banana is a labour intensive field crop, shortage of human labour is one of the major problems for growing banana, specially during the time of transplanting period. About 75 % of banana growers treated lack of human labour as a crucial problem.

3.4.5 Lack of sucker/seed

Lack of good quality HYV sucker/seed appeared to be a limiting factor in cultivating banana in the study area. Most of the farmers purchased this input from their neighboring farmers/relatives/traders but they opined that in many cases sucker/seeds were not of good

quality and the rate of mortality was quite high. About 50 % of banana growers reported against this problem.

3.4.6 High prices of fertilizer and insecticides

Fertilizer being the vital input and insecticides for precautionary measure against pest attack is essential in the production of banana. It was reported that bananas were seriously affected by pest and diseases during the study year. About 87 % of the banana growers reported that although there was timely supply of fertilizer the price was high. They complained that they had to purchase fertilizer and insecticides at higher prices in the area.

3.4.7 Lack of storage facilities

Storage problem for banana cultivation was another important problem in the study area. Because of banana being a perishable fruit crop, most of the output is sols after harvest at a lower prices due to lack of proper storage facilities. About 48 % of banana growers reported that they had no proper storage facilities.

3.4.8 Problem of theft

During the time of harvesting, stealing of banana was a common problem, which adversely affected the cultivation of banana. In the study area, about 40 % of banana growers mentioned about the problems of theft of banana.

3.4.9 Inadequate extension service

Most of the banana growers complained that they did not get any extension services regarding the improved method of banana as well as banana cultivation from the Department of Agricultural Extension (DAE). About 60 % banana of growers complained against the extension workers of the DAE.

Chapter 4
Conclusion and Recommendations

Banana plays a significant role in the economy of Bangladesh. The area and production of banana in the country has slightly increased during the last decade. In order to meet the demand for fruits for the increasing population, the government of Bangladesh has to give much more emphasis on year-round crop like banana cultivation to achieve overall nutritional self-sufficiency and to increase employment opportunities and income of the farmers. Government should take an effective step to control the price system and price spread of the market and make sure that the producers can get their reasonable price and also the consumer can also get the product in a reasonable price. Measures should be taken to improve the knowledge of a farmer to the modern cultivation technique and encouraged them to adopt the new technology to increase the production. Banana is not only important source of nutrition but also an important source of cash income to producers and traders. 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 are to be well expanded.

Based on the findings of the study, some policies and recommendations may be advanced which are likely to be useful for policy formulation:

Lack of credit supply was one of the chronic problems faced by the banana growers in the study area. Institutional credit facilities should, therefore, be made available on easy terms and conditions to the banana growing farmers.

The major constraint to high production of banana is the scarcity of HYV suckers in the study area. So, good quality HYV suckers should be made available to the door steps of the farmers at a reasonable price in time.

For increasing the production of banana, regular and adequate supply of fertilizers and insecticides should be ensured to the growers on time at fair prices.

Reasonable market prices of banana should be ensured by increasing available storage facilities and establishing various types of food processing industries.

Positive steps should be taken for improving transport and marketing facilities in the study area.

Farmers were adherence to traditional production practices in the study area and they had no training on banana cultivation. So, extension services should be extended to farmers to accelerate the production of banana.

Improved technologies needed to enable farmers to grow more banana on limited land with reduced Cost of cultivation.

The cost and returns analysis helps farmers to find out what types of variety give him higher net return.

Varieties suitable for export, higher yield potential and better quality will help increase average yields. So growers should keep attention of this side.

Higher price fluctuations can be avoided by going for proper storage facilities, monitoring, controlling movement of banana.

Proper measures to be taken for stabilizing the price fluctuation, which will improve standard of living of farmers.

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