Report on the Cost of Production of Maize
2009

Updating and Extension of Agriculture Cluster Plots and Survey of Cost of Production Project (UCPSCP)
BANGLADESH BUREAU OF STATISTICS
Statistics Division
Ministry of Planning

Secretary
Statistics Division
Ministry of Planning

Foreword

Bangladesh is predominantly an agricultural country. The agriculture sector has been dominating the economy of Bangladesh. Food security of the country is critically dependent on the domestic production of crops.

Crop Production has a significant relation to production cost. Every year government declares procurement prices before harvesting time for different crops. UCPSCP Project of Bangladesh Bureau of Statistics has undertaken the survey of 10 crops (6 major crops and 4 minor crops) with an aim to estimate the cost of production.

I am happy to know that the UCPSCP Project performed successfully to conduct these surveys for the first time. I hope that the data presented in the publication would be helpful for the policy formulation and planning process of the country.

I extend my thanks to the Director General, BBS, the Project Director and other officials who worked hard to prepare the report.

Dhaka,
December,2010

Riti Ibrahim

Director General
Bangladesh Bureau of Statistics
Ministry of Planning

Preface

Agriculture is the basic culture of Bangladesh. From the time immemorial, the main source of livelihood of the population of this land is agriculture. It plays an important role in the economic development of the country and has a great contribution to the Gross Domestic Product (GDP).

Crop production largely depends on weather variables such as rainfall, temperature, humidity etc. Moreover, Bangladesh is known as a country of natural calamity in the world. Government is fully aware of natural disaster. Government has been allocating considerable annual budget for the development of agriculture and launching different programmes one after another in order to boost up crop production.

In order to formulate proper policy and planning for the development of agriculture sector reliable and realistic data regarding production cost of crops by different phases such as leasing value of the land, land preparation, seeds/ seedlings, weeding, insecticides, fertilizers, harvesting, drying etc. are needed. Keeping these issues in active consideration, the UCPSCP Project under the control of the Bangladesh Bureau of Statistics (BBS) has been given the responsibility of surveying 10 crops (Aus, Aman, Boro, Jute, Wheat, Potato, Maize, Oil Seeds, Onion and Pulses) for the first time for deriving the cost of production of crops by interviewing farmers in field.

I express my deep gratitude to the members of the Technical Committee who rendered technical guidance for the selection of sampling units and finalization of questionnaire for the survey purpose and other survey matters.

I would like to thank all those who are associated in different works of the survey. I take opportunity to convey thanks to Mrs. Salima Sultana, Project Director and other officers and staff members of BBS who worked very sincerely to finalize the report.

Dhaka,
December, 2010.

Md. Shahjahan Ali Mollah

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	c. Mortgage	2.04
	d. Lease	4.89
	e. Others	7.48
3.	Yield of Maize per acre(in kilograms)	2464
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	b. Harvesting	14
	c. Thrashing	9
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Chapter -I

Introduction

Introduction

Bangladesh is an agricultural country. The most of her inhabitants directly or indirectly are involved in agricultural activities for their livelihood. Agriculture has a great contribution to the Gross Domestic Product (GDP) of the country. Earlier more than 50% of GDP came from this sector. When industrialization starts happening the activities of the population starts diversification towards different sectors. As a result, the contribution of the agriculture sector is slowly reducing and now reached 19% share of GDP. Still agriculture plays vital role and is known as the most important sector of the economy.

Bangladesh by birth possesses very fertile land in which diversified crops grow very easily. Various types of crops are produced in this country. These crops might have been categorized into two-food crops and cash crops. Three types of paddy namely Aus, Aman and Boro and another cereal crop, wheat are produced in this country, which are called major cereal crops. There are some other minor cereal crops. Maize is one of them. It is getting popular day by day and farmers are bringing more areas under plough under the crop. The production of Maize largely depends on the use of improved seeds, fertilizers, irrigation etc. The Government of Bangladesh has, therefore, provided top most priority to the agriculture sector specially on food crop to increase the production of cereals by giving subsidy to the farmers on different inputs such as fertilizer, irrigation etc. to achieve self sufficiency in food.

Poverty cannot be reduced to a desired level excepting increasing productivity of agriculture sector and at the same time it is to be assured that farmers get fair price of the crops. Natural calamity like draught, flood, cyclone, tornado etc. is a very regular phenomenon which hinders the production of agriculture to a great extent. Cultivable land is being decreased due to the pressure of massive population. As a result, food security is being threatened and the risk of poor people is being increased.

Bangladesh government is remarkably concerned about this agriculture sector. Notable portion of annual budget has consistently been allocated for the last couple of years for the development of the sector. Government has also been launching many programmes one after another in order to boost up the agriculture production.
Production of crops, cost of production of crops and market price of crops are directly interrelated. Government has to give proper attention on these three factors as stated so that the farmer get fair price of the crop produced during the harvest time. Generaly, Government has to declare procurement price at the harvesting time of the crop so that

producer get proper price. Procurement price of the crop has to be fixed considering all these matters. If procurement price is lower than the production cost, producers get looser and discouraged to produce more crops and if procurement price is higher than the production cost, producers get profit and encouragement. This type of loss and profit influence positively or negatively on the cultivation of next year's crops. So, an objective survey is necessary to know the cost of production of crops at farmer's level. And as such this project has been given the responsibility of conducting a survey on the cost of production of Maize.

Maize : A cereal crop:

Maize is a cereal crop. Its sowing time is mid October to December and reaping time is April to May.

Production of Maize:

Bangladesh occupies most lands of the great Bengal plane of the Gangs Delta with affluent alluvial soils. Moreover, it is a riverine area with plentiful water resources with hot and humid monsoon climate. However the condition of Bangladesh is blissful for growing Maize.

Table: Acreage, Production and yield rate of Maize during the last ten years,

Year	Acreage in '000'	Production in '000' M. Tons	Yield rate M. tons
1998-99	7	3	0.43
1999-00	8	4	0.50
2000-01	11	10	0.91
2001-02	49	64	1.31
2002-03	72	117	1.62
2003-04	124	241	1.94
2004-05	165	356	2.16
2005-06	243	522	2.15
2006-07	373	902	2.42
2007-08	549	1343	2.43

Source : Statistical year book of Bangladesh-2008.

From the table it is evident that in the recent years the cultivation of Maize is increasing rapidly and it is due to high demand of the crop in the market. Per acre yield also registers substantial high due to use of high yielding variety seeds. .

1.1. Scope and coverage of the survey.

Survey on the production cost of *Maize* 2008-09 is a household based survey. Under the purview of this survey the target population was all dwelling households of the sample area. Ten separate surveys for 10 crops like Aus, Aman, Boro, Potato, Jute, Wheat, Maize, Onion, Oilseeds and pulses are conducted following the same sampling design. A target sample of 100 upazilas are selected from 64 districts to capture the rare crops like onion, oilseeds and pulses, where the rest seven crops are believed to be available.

1.2. Objective of the survey:

The specific objective of the survey is

- ►to estimate per acre production cost of Maize
- ►to estimate per kilogram production cost of Maize

The other objectives of the survey are as follows:

- ►to know the area under Maize by land tenure
- ►to asses the cost of production of Maize by different phases
- ►to produce benchmark data on the production cost of Maize
- ►to assist the policy maker by supplying data on the cost of production of Maize in order to formulate appropriate policies for increasing the production of Maize crop

Chapter -II

Methodology

Methodology

2.1 Sample Design:

Sample design is the most important aspect of a survey, which strongly affects survey results. An integrated sample design for conducting survey on the cost of production of 10 crops has been developed. Maize is one of the 10 crops. Sample design has been discussed in detail below:

2.1.1. Universe:

Bangladesh as a whole is taken as the universe of the survey.

2.1.2 Sampling Technique:

Multi-stage sampling technique has been followed.

2.1.3 Sampling Frame:

The list of Districts, Upazilas, and the Mauzas, growing the particular crop Maize, are used as the sampling frame.

2.1.4 Detailed Sample Design:

As this survey is a part of the sample survey on cost of production of 10 crops such as Aman, Aus, Boro, Wheat, Jute, Potato, Maize, Oil Seeds, Pulses and Onion, the sample design for Maize crop has followed the same design as the integrated sample design for the said 10 crops.

A national sample survey on cost of production of 10 major and minor corps already conducted by the BBS was a complex survey. If the survey had been conducted separately for each crop, it would be very simple and straight forward. But as it had been conducted by a single survey, it became complex. The crops have different acreages ranging from below 1 percent (O.72%) for maize to 35% for Aman crop and they are grown at different times of the crop year. While Aman, Boro and Aus are grown throughout the country, other crops are not grown so widely. Furthermore, cultivation of some minor crops is rare and localized. They grow heavily in some places and do not grow at all in other places of the country. Estimates at sub-national level, say at divisional level, for such minor crops become difficult.

2.1.5 Sample Size Determination:

The total acreages and the percentages of acreages of these crops obtained from Sample Survey of Agriculture, 2005 are shown in Statement-I (See Annex- B). The gross cropped area in the country is 299, 90,170 acres as per the Sample Survey of Agriculture, 2005. Using these percentages of acreage of these crops in the country, the minimum sample size for each of these crops is determined in statement-1 applying the following equation which is popularly used for determination of sample size with error and confidence level 95%:

$$n = \frac{pq(1.96)^2}{e^2}$$

Where,

P= Proportion of a crop to total gross cropped area

q=1-p

e= Error level (5% error level is used in this case)

If the survey was conducted for each crop separately drawing the sample from the national frame of the crop all over the country, the sample size (n) as shown in statement-1 would be sufficient to provide cost estimate of the crop with 95% confidence level for the country as a whole. But if divisional estimate is necessary for the crops, n should be 6 times more than the national estimate as given in the statement to conduct the survey for the crop at divisional level. If the samples are drawn independently for each crop then they are likely to be distributed in many Upazilas all over the country resulting higher cost for both increasing man power and traveling distance. With the objective of reducing cost of the survey, the sample is drawn for one crop namely, oil seeds which is distributed almost throughout the country, where n=103. The minimum sample number required for all divisions is (103 X 6) 618 farms growing oil seeds.

2.1.6. Selection Procedure:

If divisional estimates are required for all crops, it is pre-determined that primary sampling units (PSUs) i.e. Upazilas should be selected from 64 districts. It is also decided that at least 100 Mouzas/Eas (Enumeration Area) as Secondary Sampling Units should be selected from 64 districts. The selected Mouzas/EAs will consist of about 250 households. The farm households growing the particular crop are the ultimate sampling unit in the survey. All farm households growing the particular crop in the selected Mouzas/EAs have been interviewed in the survey.

A total of 100 Upazilas have been selected randomly from 64 districts. At first 64 Upazilas having minor crop oil seeds are selected from 64 districts and then the remaining 36 Upazilas have been selected from the districts having higher number of Upazilas growing the particular crops excluding Chittagong hill districts. One Mouza/EA have been selected from each of the 100 selected Upazilas having the highest acreage of the particular crop (oil seeds) and the selection has been made at the Upazila headquarter since the sampling frame of Mouza having a particular crop is available at the Upazila level. These 100 upazilas have been used for all other 9 crops and the same Mouzas/EAs selected for minor crops such as oil seeds are taken as the sample Mouza/EAs. All the farm households with 0.05 acres of land growing these crops in the selected mouza/EA have been interviewed in the survey. The expected number of farm households that might have been interviewed for each of these crops is shown in Statement-I (see annexure- B).

2.2. Data Collection and its whole process:

As data collection has a noteworthy impact on the quality of survey results, it is treated as a significant part of survey. Considering its importance, the following measures have been taken during the preparation of questionnaire as the tool of data collection:

- Brain-storming activity has been carried out by the members responsible for developing the questionnaire going to the field again and again in order to design a good questionnaire. They have thoroughly discussed most of the issues relating to the production and the cost of production of Maize with the farmer.
- Questionnaire has been pre-tested;

- Comprehensive manual of data collection with clearly defined concepts and definitions have been made;
- Training programme for the enumerators and supervisors has been conducted;
- Required number of field staff in order to ensure smooth data collection has been set up;
- To take extra-care to the data collection activity, sufficient number of supervisors has been occupied.

2.2.1. Questionnaire Design:

A questionnaire is a powerful evaluation tool that allows the collection of data through the use of multi-dimensional questions. A questionnaire written without a clear goal and purpose is inevitably going to overlook important issues and waste enumerators' as well as respondents' time by asking and responding useless questions. All these matters have been tried to address to the extent possible in case of developing the questionnaire for this survey.

2.2.2. Process of questionnaire design:

A sub-committee comprising of eight members- from different departments and university Bangladesh Bureau of Statistics (BBS) – have been formed in order to facilitate the questionnaire development activity. Project Director, Advisor and some other members of the sub-committee have paid several visits to the field with a view to being acknowledged what are the factors of production and the pros and cons of the whole process of the production of Maize as well. They discussed the matter with the farmers who grow Maize. After having the knowledge on the issue, they have placed the feedback to the meeting of the sub-committee. Sub-committee have thoroughly examined the feedback and selected the topics of the survey. Project Director and Advisor have been assigned to form a questionnaire on the selected topics and eventually, they have developed a questionnaire with seven questions. Subsequently the questionnaire has been brought forward to the Technical Committee, the highest statistical body, which has finally approved the questionnaire.

2.2.3. Pre-testing the questionnaire:

The questionnaire has been pre-tested to examine the time necessitated to complete the interview, test the reliability i.e. whether it capture the information desired, and also investigate the consistency whether the information gathered by it is related to the whole purpose of the survey. The test has also been targeted to check the logistics required for successful operation of the survey.

In order to ensure the best performance of the questionnaire in respect of data collection, processing and analyzing, the pre-testing has been carried out almost two months before the survey at rural area of Tangail District and Savar- an Upzila belonging to Dhaka district. A group including Project Director, Advisor, some members of the sub-committee had gone to the mentioned two places to take part in testing the questionnaire. They have chosen some of the farmers at random as the respondent. The farmers have helped the team cordially and wanted to know whether they would be benefited in any way. However it was a very successful programme.

2.2.4. Findings of the Pre-test:

Depending on the findings of the pretest, modifications to the questionnaire have been made in the structure and wording of the questionnaire. It has also taken care of semblance of the question, that is, the meaning and clarity which yields the intended information from the respondent. Furthermore, considerable amendment has also taken place in the enumerator's manual in view of ensuring proper questionnaire administration.

After pre-testing some significant suggestions from the respective team have been made, which had been eventually adopted properly in the final questionnaire. During the pre-test, it has been found that farmers, the respondents do not feel comfortable to respond to the questions relating to the total area of the land under Maize crop as they have cultivated it in many plots. Considering the fact, the structure of the questionnaire significantly changed. Deleting the aggregate area in a single row, the new concept, area by plot in seven rows has been incorporated.

2.2.5. Finalization of the Questionnaire:

After addressing all the changes following the recommendations evolved from the pre-test, the questionnaire was placed to the Technical Committee. The committee also put notable contribution to the questionnaire. Eventually, the questionnaire has been finalized by the approval of the Technical Committee.

2.2.6. Training of the Master Trainers (Division and Regional Coordinator) and Enumerators: Training has been arranged in two phases in order to make the master trainers and enumerators perfectly conceptualized with the concepts and definitions of each word of the questionnaire as well as to convey the proper way of data collection. At the first stage, two days training programme conducted by the Project Director and Advisor has been arranged at the head office of BBS in Dhaka. On the first day the participants receive rigorous training on the concepts, definitions and the questionnaire and on the next day they have gone to the rural area of Savar Upzila with a view to having hands-on exercise on the questionnaire. In the second phase, enumerators have been trained for two days by the master trainers at the Regional Statistical Offices (RSOs) following the same sequence as the training arranged at the first phase. At first, enumerators receive training on the questionnaire and in the next day they also visit field at remote area of the respective region in order to have experience on hand. However, most of the trainees- both master trainers and enumerators- actively participated in the training and also made some suggestions which were subsequently taken into consideration.

2.2.7. Method of Data Collection: Face to face interview has been carried out following Paper and Pencil (PAPI) method.

2.2.8. Data Collection and Supervision: Data collection has taken place during March 2009 at the homestead of the household. Usually the respondents are the head of household. The total of 100 enumerators, who are the employees of BBS and have proven experience in this field, have been engaged in data collection from the farm households and the total of 28 supervising officer named Regional Coordinators are responsible for supervising the data collection task. All supervising officers have been directed to stay at the respective region during the period of data collection so that they

can extensively supervise data collection task and address instantly any untoward problem arising during data collection. Three divisional coordinators including Project Director are also responsible to oversee all activities at field level relating to data collection. Furthermore, all possible measures have been taken to have a good quality of data.

2.2.9. Data Editing and Coding:

Data editing and coding are another vital phases of the survey, which is indispensable for data processing. It should be completed before data processing. In case of this survey coding has been done along with questionnaire development so that the enumerator can easily and accurately mark the right answers.

Data editing refers to the activity of checking and cleaning data that have already been collected from the field. A group of experienced staff from Agriculture Wing under the supervision of two officers from the same Wing have carried out the work of data editing with careful attention.

2.3 Data Processing:

Data processing involves many steps that are very important because it affects survey results according to the involved steps. During data processing following steps have been taken.

- Data entry
- Appending and Merging files
- Data validation (further checking, editing, and imputation)
- Final decision on errors
- Completion of data processing and generation of data files
- Final documentations
- Conversion of data files to another software.
- Storage of all files

Data Entry:

After editing, all questionnaires have been sent to Computer Wing of BBS in order to do all works of data processing. Computer Wing has maintained the steps as mentioned aiming to ensure perfect data processing:

1. Software Used: Five softwares named CSPro, Foxpro, Oracle (SQL), SPSS and Excel have been used for processing the survey data. CSPro have been used for data entry, Foxpro also for editing, Oracle for tabulation, SPSS for data analysis and Excel for printing output.

2. Designing Data Entry Application: The first thing to do was to create the data dictionary based on the questionnaire. The data dictionary has consisted of ID items, records, items of the records, and also values of the items. Logic check was also maintained to avoid errors of inconsistency. After finishing the data dictionary, the data entry forms have been developed depending on data dictionary. After that, the data entry form are tested and, therefore, readily available for use.

3. Data capturing and Preliminary Validation

Just after the completion of data editing manually, data have been captured in computer. During data capturing, a variety of common errors have been identified. As a result data have been checked and cross checked with questionnaire depending on error message. During data processing, the appropriate corrective methodologies mentioned below have been used to ensure clean data.

- **Wrong data and out of range codes:** Firstly, the data collection instrument restricts the enumerator to a set of codes within the acceptable range for most of the questions. Secondly, the values have been set for avoiding wild codes for most of the questions. For example, the code for ownership of land has been set 1 to 5.
- **Inconsistency checking:** It has been done during designing the data entry program to avoid errors and inconsistency.
- **Treatment of Missing values:** The data entry program has been designed not to allow blanks that ensure not having missing values in the data.
- **Incomplete records and dropped cases.** The data entry program has designed to accept the complete data case; otherwise, it would not be saved. This has been set to avoid incomplete records and dropped cases.

- **Duplication of entries.** The data entry program has been designed in view of rejecting duplication of entries based on the identifiers.

4. Appending and Merging files: After data entry, files have properly been appended and merged in order to bring all data in a single file.

5. Data Validation: Validation has been accomplished after appending and merging files by checking the number of variables, the cases, wild codes, missing value and consistency. It has been made sure that the number of variables generated matched with the number of variables in the data set.

6. **Final decision on errors:** If there has been found any error during data validation, it is checked and rechecked; and sometimes it has been sent back to the survey authority to decide how it would be treated.

7. Completion of data processing and generation of data file: Addressing the final decision on error, data processing task have been completed and generated a data file which contains micro data.

8. Data preservation: After completion of processing, data have been stored in ASCII format. The data have also been converted to Microsoft Excel format in order to have the print out. Both original and new format have been preserved. The questionnaires have also been filed for safe storage. A copy of the data set has been put forward to the survey authority for tabulation and analysis.

2.4 Tabulation:

Tables focusing on the vital components such as total number of labours engaged in production of Maize, cost of land preparation, seeds used and their price, fertilizer used and their price, cost of insecticides, cost of production by phases etc. have been generated. All these tables have been given in the part of analysis and annexure.

2.5 Data Analysis and Dissemination:

Survey results have been analysed in tabular form. Major variable is explained vertically (columns) and cross tabulation by another related variable(s) horizontally. In the analysis, it has been described the variation of the magnitude of the major variables by division. Many aspects of production and the cost of production of Maize have also been explained nationally.

The final report has been disseminated both in electronic form and hard copy as book. Results are available in the website of BBS. Some data may also be published in other publications of BBS such as Statistical Year Book of Bangladesh, Year Book of Agriculture Statistics of Bangladesh, and Monthly Statistical Bulletin etc.

Chapter-III

Statistical findings

Statistical findings

Various components are used in different stages of growing a crop from sowing to harvesting. This chapter deals with the cost related components of production to Maize crop. The components involved are i) land tenure ship such as own, share cropping, mortgage, lease and others, ii) labourers employed by phase such as land preparation, sowing, weeding, harvesting etc iii) use of seeds , fertilizers, pesticides, irrigation etc. iv) production cost and v) productivity etc.

Maize producing households (HHs) in the sample area:

24625 sample households (HHs) were under the survey purview across the country, of which only 592 HHs were involved in maize cultivation. The table reveals that only 2.40% of HHs at national level cultivated Maize indicating that a small number of farmers grow the crop in the country.

Table-3.1. Total number of PSU, SSU, USU (HH) & number of households producing Maize crop

Division	Total Number				
	PSU	SSU	USU(HH)	HH producing Maize	% of HH producing Maize
Barisal	9	9	2250	18	0.80
Chittagang	16	16	3625	103	2.84
Dhaka	25	25	6250	32	0.51
Khulna	16	16	4000	79	1.98
Rajshahi	28	28	7000	360	5.14
Sylhet	6	6	1500	0	0.00
Bangladesh	100	100	24625	592	2.40

It is seen from the table that the highest (5.14) percent households grow Maize in Rajshahi division. Followed by Chittagong division (2.84%), Khulna division (1.98%) and Barisal division (0.80%). The crop is not cultivated in sample areas of Sylhet division.

Area under Sample:

Out of 24635 households surveyed 298.36 acres of land under maize are recorded.

Table- 3.2(a) Area (acres) under maize as recorded in the sample area by variety and by division.

Variety of maize	Division						Total
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Sylhet	
Composite	0.24 (0.08)	18.00 (6.03)	0.51 (0.17)	0.50 (0.17)	9.06 (3.04)	-	28.31 (9.49)
HYV	2.82 (0.95)	38.13 (12.78)	7.86 (2.63)	19.55 (6.55)	201.69 (67.60)	-	270.05 (90.51)
Total	3.06 (1.03)	56.13 (18.81)	8.37 (2.80)	20.05 (6.72)	210.75 (70.63)	-	298.36 (100.00)

Figures in parenthesis are the percentages of the total area.

Out of total cultivated area under maize, about 91% of the area is occupied by HYV. Sylhet division responded no cultivation of maize. 210.75 acres of land under the crop is registered in Rajshahi division which covers the highest 71% of the total area. Chittagang and Khulna divisions register 56.13 acres and 20.05 acres respectively under the crop. Areas (acres) under Maize are illustrated in the bar-diagram below.

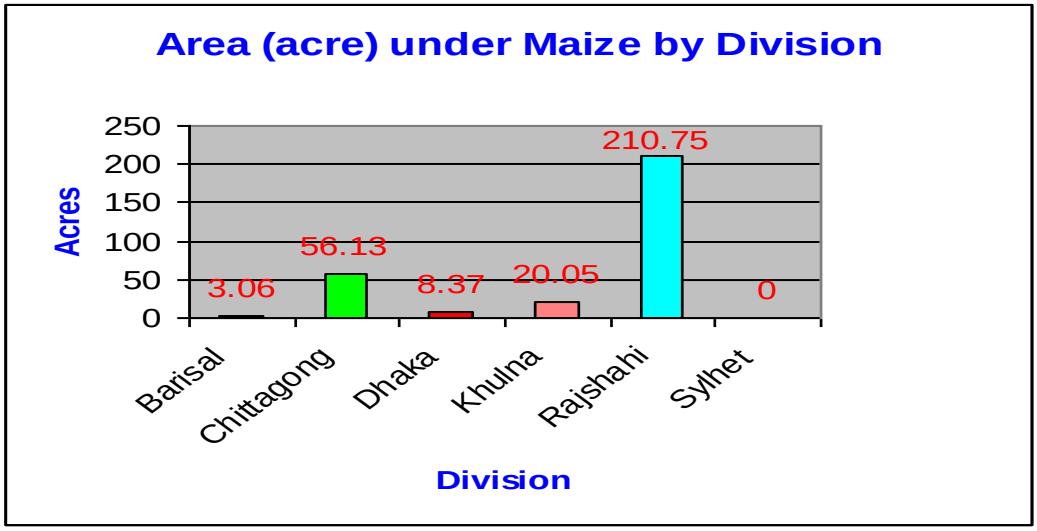


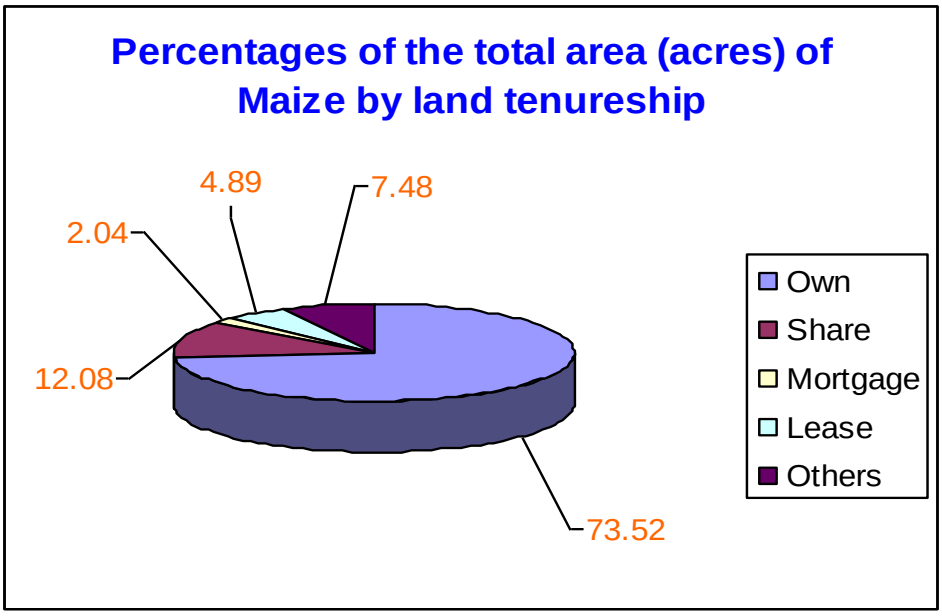
Table-3.2 (b): Area (acres) under Maize as recorded in the sample area by variety and by land tenureship.

Fig. in acres

Variety of Maize	Tenure ship					Total
	Own	Share	Mortgage	Lease	Others	
Composite	8.88 (2.98)	2.11 (0.71)	0.26 (0.09)	0.50 (0.17)	116.56 (39.07)	28.31 (9.49)
HYV	210.46 (70.54)	33.92 (11.37)	5.82 (1.95)	14.08 (4.72)	5.77 (1.93)	270.05 (90.51)
Total	219.34 (73.52)	36.03 (12.08)	6.08 (2.04)	14.58 (4.89)	22.33 (7.48)	298.36 (100.00)

Figures in parenthesis are the percentages of the total area.

By tenureship consideration own type of lands covers 73.52% of the total area out of total area 298.36 acres. Share cropping and others type of tenureship also cover significant percentages of the area of 12.1% and 7.5% respectively. Figures of all types of tenureship combined and separately are displayed in the above table. Percentages of the total area (acres) of Maize by land tenureship are depicted in the pi-chart below.



Land preparation:

Land is prepared first by tilling either by power tiller or by country plough for the sowing of seeds. The costs involved in it are displayed in the table below.

Table-3.3: Per acre land preparation cost of Maize by size of land planted.

(Fig in Tk)

Size of land planted(acres)	Combined	Variety of maize		Tenure ship	
		Composite	HYV	Own	Others
<= 0.04	2286	2143	2357	2353	2000
0.05 – 0.49	2129	2084	2132	2125	2143
0.50 – 0.99	1723	1875	1707	1625	1890
1.00 – 1.49	1843	1844	1843	1763	2033
1.50 - 2.49	1830	1951	1813	1767	2067
2.50 – 4.99	1728	1875	1705	1812	1857
5.00 – 7.49	1848		1848	1848	
7.50 +					
Average	1878	1935	1872	1851	1953

Note: Others include share cropping, mortgage, lease & others.

Per acre land preparation cost of total maize is recorded as Tk 1878 and it varies from Tk1723 to Tk 2286 among 8 sizes of land planted. For the composite variety the cost is Tk 1935 and for HYV it is Tk 1872. If the figures are analysed the cost is higher for smaller land size planted.

Per acre land preparation cost of Maize for own type of lands (Tk 1851) is substantially less than that of others type of lands (Tk 1953).

Seeds:

Seeds are sown after the preparation of lands. Per acre cost of seeds along with the cost of sowing is Tk 2342. For the composite variety the cost is Tk 1891 and for hyv it is Tk 2389. The Table focuses that the cost of HYV seeds is higher than that of composite.

Table-3.4: Per acre seed and sowing cost by size of land planted.

(Fig in Tk)

Size of land planted	Combined	Variety of maize		Tenure ship	
		Composite	HYV	Own	Others
<= 0.04	2495	2229	2629	2600	2050
0.05 – 0.49	2388	2033	2419	2406	2315
0.50 – 0.99	2291	1846	2337	2213	2426
1.00 – 1.49	2330	1957	2366	2275	2464
1.50 - 2.49	2330	1804	2402	2306	2422
2.50 – 4.99	2373	1775	2467	2476	2043
5.00 – 7.49	2461		2461	2461	
7.50 +					
Average	2342	1891	2389	2330	2375

Note: Others include share cropping, mortgage, lease & others.

Irrigation, Pesticides and others:

At the growing stage of the crop the plants demands irrigation. Green plants are sometimes attacked by insects/pests. Per acre costs of these components are shown below in table 5.

Table-3.5: Per acre insecticide, irrigation & others cost by size of land planted.

(Fig in Tk)

Size of land planted	Combined	Variety of maize		Tenure ship	
		Composite	HYV	Own	Others
<= 0.04	1905	1393	2286	1882	2000
0.05 – 0.49	1978	1703	2002	1968	2018
0.50 – 0.99	2086	1916	2104	2075	2106
1.00 – 1.49	1968	1753	1989	1877	2193
1.50 - 2.49	1964	1804	1986	1958	1987
2.50 – 4.99	2067	1875	2096	2188	1680
5.00 – 7.49	1887		1887	1887	
7.50 +					
Average	2012	1811	2034	1998	2052

Note: Others include share cropping, mortgage, lease & others.

Per acre cost of these components combined is registered as Tk 2012 for all sizes of land planted. The cost of composite variety is lower at Tk 1811 than that for HYV (Tk 2034).

Considering tenureship, per acre cost under these components combined for own type of land is Tk 1998 and for others type of land it is Tk 2052.

Fertilizer:

For well growth of the crop both organic and inorganic fertilizers are used. The table below shows the per acre cost of fertilizer used.

Table-3.6: Per acre cost of fertilizer by size of land planted

(Fig in Tk)

Size of land planted	Combined	Variety of maize		Tenure ship	
		Composite	HYV	Own	Others
<= 0.04	1667	1629	1686	1706	1500
0.05 – 0.49	1965	2015	1961	1986	1880
0.50 – 0.99	1766	1400	1804	1809	1693
1.00 – 1.49	1861	1752	1872	1840	1914
1.50 - 2.49	1963	1421	2064	1956	1990
2.50 – 4.99	1775	1463	1824	1908	1650
5.00 – 7.49	1724		1724	1724	
7.50 +					
Average	1867	1576	1897	1899	1776

Note: Others include share cropping, mortgage, lease & others.

The cost of fertilizer used for one acre of land under Maize for all types of land planted is Tk 1867. It recorded Tk 1576 for composite variety and Tk 1897 for HYV. It is unearthed from the table that farmers who cultivated maize in their own lands spant more (Tk 1899) than the farmers of others type of lands who spent Tk 1799 for this purpose.

Weeding, harvesting, thrashing and others:

During the growth of the plants weeding and intercultural practices are done. When the grains are matured the crops are harvested and thrashed. Per acre cost for these components combined is as follows:

Table-3.7: Per acre weeding, harvesting, thrashing & others cost of Maize by size of land planted

(Fig in Tk)

Land size of land planted	Combined	Variety of Maize		Tenure ship	
		Composite	HYV	Own	Others
<= 0.04	4500	3357	5071	4794	3250
0.05 – 0.49	4430	3011	4554	4432	4423
0.50 – 0.99	4178	3003	4300	4166	4198
1.00 – 1.49	4040	3018	4138	4037	4047
1.50 - 2.49	3892	2931	4022	4021	3402
2.50 – 4.99	3865	3100	3985	4097	3121
5.00 – 7.49	4444		4444	4444	
7.50 +					
Average	4159	3009	4280	4205	4029

Note: Others include share cropping, mortgage, lease & others.

It is noticed from the table that per acre cost of weeding, harvesting, trashing and others combined is Tk 4159. The costs are Tk 3009 and Tk 4280 for composite and HYV respectively. The table clearly exposes that the cost is higher for smaller land size planted.

By tenureship the cost is Tk 4205 for the farmers who planted maize in their own lands and Tk 4029 for those who cultivated the crop in the 'others' type of land.

Labourer:

Table-3.8: Per acre number of labour engaged for weeding by size of land planted

Land size of land planted	Combined	Variety of maize		Tenure ship	
		Composite	HYV	Own	Others
<= 0.04	17	16	17	17	17
0.05 – 0.49	15	13	15	16	14
0.50 – 0.99	9	9	9	9	9
1.00 – 1.49	8	8	9	8	9
1.50 - 2.49	9	8	9	8	9
2.50 – 4.99	8	8	8	8	9
5.00 – 7.49	7		7	7	
7.50 +					
Average	11	9	11	11	10

Note: Others include share cropping, mortgage, lease & others.

Per acre number of labourers deployed for weeding work of the crop is found to be 11. The numbers are 9 and 11 for composite and HYV respectively. For own type of land it is 11 and for others type it is 10. It is noticed from the table that farmers of smaller land size engaged more labourer (15-17) than the higher land size.

Table-3.9: Per acre number of labourers engaged for harvesting by size of land planted

Land size of land planted	Combined	Variety of maize		Tenure ship	
		Composite	HYV	Own	Others
<= 0.04	17	17	17	18	15
0.05 – 0.49	15	14	16	15	15
0.50 – 0.99	13	12	13	14	13
1.00 – 1.49	12	10	13	13	12
1.50 - 2.49	11	10	11	13	9
2.50 – 4.99	10	10	11	12	8
5.00 – 7.49	10	-	10	10	-
7.50 +	-	-	-	-	-
Average	14	11	13	15	12

Note: Others include share cropping, mortgage, lease & others.

Per acre number of labourers engaged for harvesting work of the crop is observed as 14 for all varieties combined for all sizes of land planted. It is seen from the table that 11 labourers are needed for composite variety and 13 for HYV. If it is considered by tenure ship, the farmers who planted maize in their own lands engaged 15 umber of labourers. For the 'others' type of lands the figure is12.

Table-3.10: Per acre number of labourer engaged for thrashing by size of land planted

Land size of land planted	Combined	Variety of maize		Tenure ship	
		Composite	HYV	Own	Others
<= 0.04	11	8	12	11	11
0.05 – 0.49	9	6	11	9	10
0.50 – 0.99	7	6	8	8	8
1.00 – 1.49	7	4	8	8	6
1.50 - 2.49	7	4	8	8	5
2.50 – 4.99	7	4	8	8	5
5.00 – 7.49	7		7	8	
7.50 +					
Average	9	5	10	9	6

Note: Others include share cropping, mortgage, lease & others.

The table shows that the number of labourers deployed were 9 for the thrashing work of one acre crop and it ranged from 7 -11 for different sizes of land planted. Per acre number of labourers for thrashing works of Maize for composite and HYV are 5 and 10 respectively. Farmers have to engage more laboureres for smaller size of lands of the crop. Farmers employed more number of labourers for their own lands (9) than for other type of lands (6).

Production cost:

Per acre production cost is the sum total of the costs of all inputs and all labourers involved/engaged in different stages of the crop. In the table shown velow per acre production cost of Maize is furnished.

Table-3.11: Per acre production cost by size of land planted by variety and tunership.

(Fig in Tk)

Land size of land planted	Combined	Variety of Maize		Tenure ship	
		Composite	HYV	Own	Others
<= 0.04	12853	10501	14029	13335	10800
0.05 – 0.49	12893	10846	13068	12912	12779
0.50 – 0.99	12244	10040	12282	11888	12313
1.00 – 1.49	12042	10324	12208	11792	12651
1.50 - 2.49	11979	9911	12287	12008	11868
2.50 – 4.99	11808	10180	12077	12482	10351
5.00 – 7.49	12364		12366	12364	
7.50 +					
Average	12258	10222	12472	12283	11585

Note: Others include share cropping, mortgage, lease & others.

It is observed from the table above that per acre production cost of maize at national level stands at Tk 12258. At different sizes of land planted under the crop the cost varies from Tk 11808 to Tk 12853. Per acre production cost of composite variety is Tk 10222 and Tk 12472 for HYV.

With the consideration of tenureship it is noticed that per acre production cost of own type of lands is Tk 12283 and that of other type of lands is Tk 11585.

Per acre production (in kilograms):

Per acre production (in kilograms) of maize by size of land planted and by variety and tenureship are shown as under.

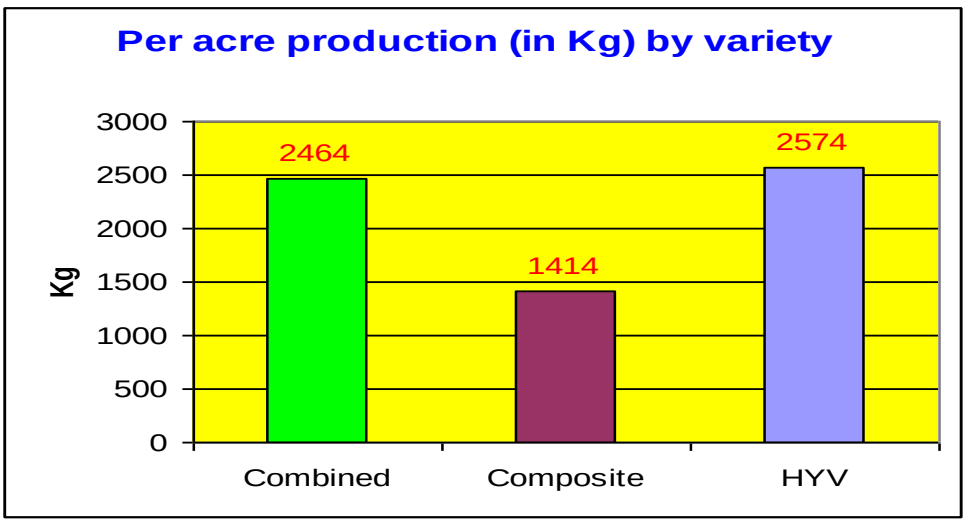
Table-3.12: Per acre production (in Kg) by size of land planted

(fig. in Kilograms)

Size of land planted(acres)	Combined	Variety of maize		Tenure ship	
		Composite	HYV	Own	Others
<= 0.04	2248	1457	2643	2482	1800
0.05 – 0.49	2593	1420	2695	2654	2341
0.50 – 0.99	2591	1481	2707	2754	2318
1.00 – 1.49	2299	1461	2378	2438	1946
1.50 - 2.49	2148	1351	2256	2068	2450
2.50 – 4.99	2504	1300	2694	2532	2414
5.00 – 7.49	2288		2288	2288	
7.50 +					
Average	2464	1414	2574	2531	2276

Note: Others include share cropping, mortgage, lease & others.

The table reveals that per acre production of Maize for the varieties combined is 2464 kilograms. Farmers reaped one acre land of composite variety with 1414 kilograms and HYV with 2574 kilograms. Per acre yield rate of HYV is 82% more than that of composite variety. Farmers who cultivate maize in their own lands harvested 2531 kilograms of maize for one acre land whereas it less at 2276 kilograms for other type of lands. It is clearly understood that per acre yield rate of maize for own type of land is higher than that of others type of land. Per acre production (in Kg) of Maize by variety is illustrated in the bar-diagram below:



Per acre production value:

Just after harvest farmers generally sell their produce at their homesteads and get value (in Taka) from the produce. Per acre production value (in taka) of Maize by size of land planted is shown below:

Table-3.13: Per acre production value by size of land planted

(Fig in Tk)

Size of land planted(acres)	Combined	Variety of maize		Tenure ship	
		Composite	HYV	Own	Others
<= 0.04	24271	18743	28638	25512	22000
0.05 – 0.49	28974	15395	30158	29368	27365
0.50 – 0.99	27843	16350	29034	29163	25624
1.00 – 1.49	24358	15176	25221	25027	22661
1.50 - 2.49	25159	13780	26709	25363	24390
2.50 – 4.99	27755	13800	29963	29189	23169
5.00 – 7.49	28570		28570	28570	
7.50 +					
Average	27175	15119	28441	27928	25073

Note: Others include share cropping, mortgage, lease & others.

It is observed from the table that combined total per acre production value of Maize is Tk 27175. For composite variety per acre production value stands at Tk 15119 and for HYV it is Tk 28441. If it is considered by land tenure ship, per acre production value of own type of land and others type of land are Tk 27928 and 25073 respectively.

Table-3.14: Per Kg. production cost and production value.

Variety	Per Kg. production cost (inTk.)	Per Kg. production value(in Tk.)
Composite	7.23	10.69
HYV	4.85	11.05
Average	4.95	11.02

Productivity:

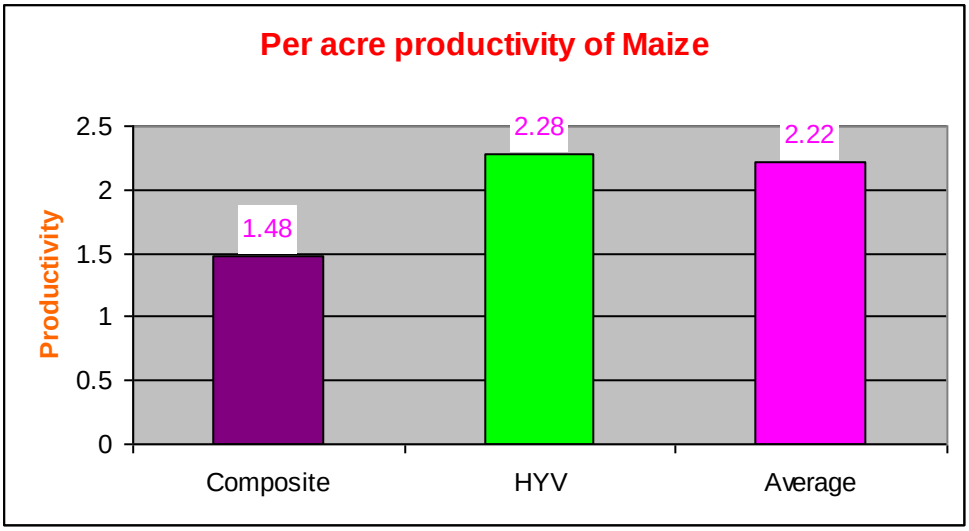
Where production value is higher than production cost it means the producer gets some profit from the produce and being encouraged the producer will continue to produce the item. Sometimes opposite picture is seen and the producer will stop to produce the item. Here a complete positive picture is exposed which is displayed below.

Table:3.15: Per acre productivity of Maize by variety

Variety	Production cost (in Tk)	Production value (in Tk)	productivity
Composite	10222	15119	1.48
HYV	12472	28441	2.28
Average	12258	27175	2.22

The table discloses that per acre productivity of Maize is 2.22 which means production value is more than double of production cost. Productivity of HYV Maize is 2.28 and it

exposes that farmers get more benefit in producing the crop. Per acre productivity has been shown in the diagram below:



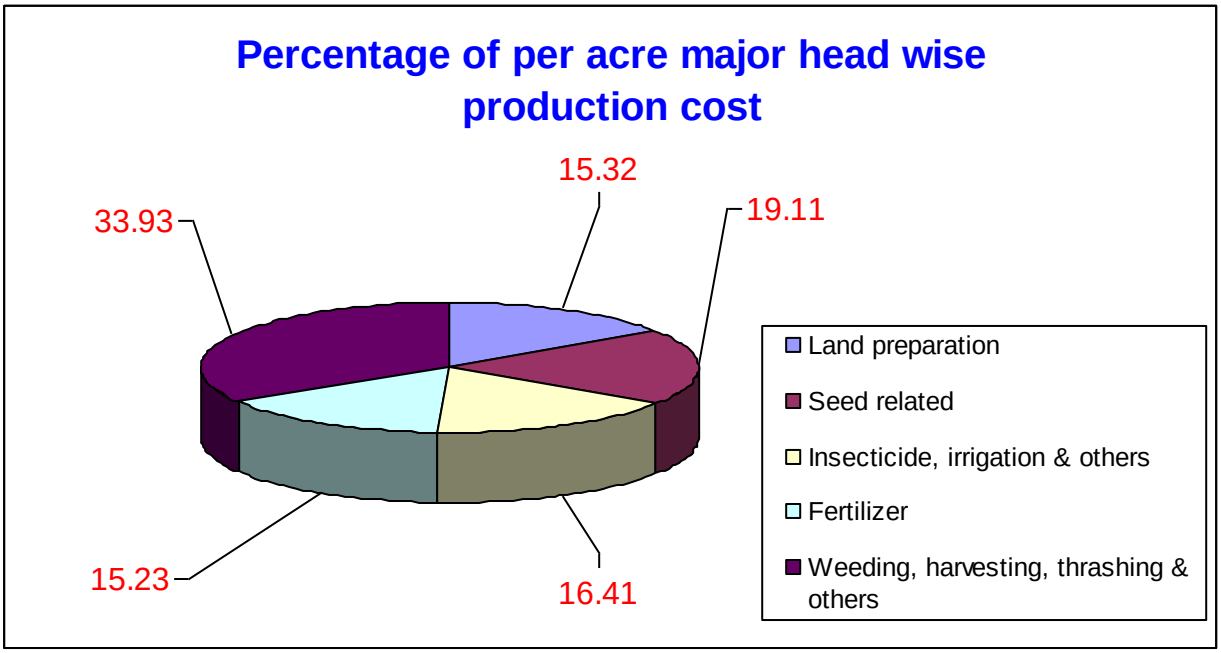
Major head wise per acre production cost of Maize.

Per acre production cost of Maize by major heads are displayed in the table 3.16. It is to be mentioned here that non response of the information from the most farmers about the leasing value (land rental value) of the land for the cultivation of Maize, it has not been possible to show per acre leasing value.

Table-3.16. Per acre major head wise production cost of Maize by size of land planted.

Size of land Planted (Combined)	Major head wise Production cost (in Tk)					
	Land preparation	Seed related	Insecticide, irrigation & others	Fertilizer	Weeding, harvesting, thrashing & others	Total
<= 0.04	2286	2495	1905	1667	4500	12853
0.05 – 0.49	2129	2388	1978	1965	4430	12893
0.50 – 0.99	1723	2291	2086	1766	4178	12244
1.00 – 1.49	1843	2330	1968	1861	4040	12042
1.50 - 2.49	1830	2330	1964	1963	3892	11979
2.50 – 4.99	1728	2373	2067	1775	3865	11808
5.00 – 7.49	1848	2461	1887	1724	4444	12364
7.50 +						
Average	1878	2342	2012	1867	4159	12258
Percentages(%)	15.32	19.11	16.41	15.23	33.93	100

The table exposes that about 34% of the total cost are spent in weeding, harvesting, thrashing and others. Seed related cost covers about 19% followed by insecticides, irrigation and others cost about 17%. Percentages of per acre major head wise production cost of Maize are shown in the Pi-chart below.



3.17 Sampling error and data reliability

Using the random group method the estimated variance of R has the following form

$$\text{Var®} = \frac{\sum_{g=1} (R_g - R)^2}{K(K-1)}$$

Where: R= the estimated average cost (land preparation / seed & seed related, pesticide & irrigation/ fertilizer /other)

R_g= the estimated mean for the g^{th} random group

K = the number of random group

Table-3.17(a): Estimated average production cost (excluding leasing) per kg for the 2008-09 variety wise maize crops and their standard errors

Variety of maize	Total		Land preparation		Seed & seed related, pesticide & irrigation		Fertilizer		Harvesting, thrashing &others	
	Cost	S.E	Cost	S.E	Cost	S.E	Cost	S.E	Cost	S.E
Composite	10.69	0.00757	1.36	0.00217	6.09	0.00355	1.11	0.00222	2.13	0.00263
HYV	11.05	0.00209	0.73	0.00067	7.92	0.00050	0.74	0.00085	1.66	0.00081
Combined	11.03	0.00080	0.76	0.00016	7.82	0.00045	0.76	0.00042	1.69	0.00040

From the above table it is seen that the average production cost per kg for composite maize of 10.69 taka is not significantly different from the 11.05 taka average production cost for HYV crops at 95% confidence level. Although the estimated production cost per kg for composite maize is subject to higher standard errors than for HYV maize crops. Production cost for all estimates have acceptable reliability in terms of sampling error.

Table-3.17(b): Estimated average production cost (excluding leasing) per acre for the 2008- 09 variety wise maize crops and their standard errors

Variety of maize	Total		Land preparation		Seed & seed related, pesticide & irrigation		Fertilizer		Harvesting, thrashing & others	
	Cost	S.E	Cost	S.E	Cost	S.E	Cost	S.E	Cost	S.E
Composite	15119	1.16964	1935	0.64555	3702	0.95363	1576	1.82560	3009	0.63129
HYV	28441	0.51492	1872	0.44140	4423	0.08259	1897	0.38704	4280	0.30657
Combined	27175	0.23060	1878	0.11756	4354	0.14148	1867	0.31910	4159	0.11679

The above table shows that the average production cost per acre for composite maize of 15119 taka is significantly different from the 28441 taka average production cost for HYV maize crops at 95% confidence level. The average production cost per acre of HYV and composite maize are almost double. The standard error of composite maize per acre is 1.16964 due to low representation in the sample.

However the estimated production cost per acre for composite & HYV maize production cost were subject to higher standard errors than for HYV maize crop. Production cost for all estimates have acceptable reliability in terms of sampling error.

Chapter-IV

Statistical Table

Statistical Table

Table-4.1A. Per acre land preparation cost of Maize by size of land planted.

(Fig in Tk)

Size of land planted (Combined)	Plough	Power tiller	Others	Total
<= 0.04	571	1571	143	2286
0.05 – 0.49	473	1308	347	2129
0.50 – 0.99	416	1016	291	1723
1.00 – 1.49	519	1057	267	1843
1.50 - 2.49	293	1303	234	1830
2.50 – 4.99	330	1138	260	1728
5.00 – 7.49	0	1545	303	1848
7.50 +	0	0	0	0
Average	417	1169	292	1878

Table-4.1B. Per acre land preparation cost of Maize by size of land planted.

(Fig in Tk)

Size of land planted (Composite)	Plough	Power tiller	Others	Total
<= 0.04	1000	1143		2143
0.05 – 0.49	464	1265	356	2084
0.50 – 0.99	114	1571	190	1875
1.00 – 1.49	380	1221	243	1844
1.50 - 2.49		1725	225	1951
2.50 – 4.99		1625	250	1875
5.00 – 7.49				
7.50 +				
Average	205	1417	252	1935

Table-4.1C. Per acre land preparation cost of Maize by size of land planted.

(Fig in Tk)

Size of land planted (HYV)	Plough	Power tiller	Others	Total
<= 0.04	357	1786	214	2357
0.05 – 0.49	474	1312	347	2132
0.50 – 0.99	447	959	302	1707
1.00 – 1.49	532	1042	269	1843
1.50 - 2.49	333	1246	235	1813
2.50 – 4.99	382	1061	262	1705
5.00 – 7.49		1545	303	1848
7.50 +				
Average	440	1136	296	1872

Table-4.1D. Per acre land preparation cost by size of land planted.

(Fig in Tk)

Size of land planted (Own)	Plough	Power tiller	Others	Total
<= 0.04	706	1471	176	2353
0.05 – 0.49	435	1337	353	2125
0.50 – 0.99	520	838	267	1625
1.00 – 1.49	574	966	223	1763
1.50 - 2.49	339	1189	238	1767
2.50 – 4.99	326	1204	283	1813
5.00 – 7.49		1545	303	1848
7.50 +				
Average	443	1123	284	1851

Table-4.1E. Per acre land preparation cost by size of land planted.

(Fig in Tk)

Size of land planted (others)	Plough	Power tiller	Others	Total
<= 0.04	0	2000	0	2000
0.05 – 0.49	631	1187	324	2143
0.50 – 0.99	237	1322	332	1890
1.00 – 1.49	389	1272	372	2033
1.50 - 2.49	118	1734	215	2067
2.50 – 4.99	343	1329	185	1857
5.00 – 7.49				
7.50 +				
Average	345	1296	312	1953

Table-4.2A. Per acre seed and sowing cost by size of land planted.

Size of land planted (Combined)	Seed		Seed sowing (Tk)	Total (Tk)
	Quantity (Kg)	Cost (Tk)		
<= 0.04	8.50	1429	1067	2495
0.05 – 0.49	8.00	1543	845	2388
0.50 – 0.99	8.00	1525	766	2291
1.00 – 1.49	7.50	1558	772	2330
1.50 - 2.49	7.50	1609	721	2330
2.50 – 4.99	7.50	1579	794	2373
5.00 – 7.49	7.50	1523	938	2461
7.50 +				
Average	8.00	1553	789	2342

Table-4.2B. Per acre seed and sowing cost by land size of maize crops, 2008-09

Size of land planted (Composite)	Seed		Seed sowing Tk)	Total (Tk)
	Quantity (Kg)	Cost (Tk)		
<= 0.04	9.00	1429	800	2229
0.05 – 0.49	9.00	1402	631	2033
0.50 – 0.99	7.50	1282	563	1846
1.00 – 1.49	7.50	1371	587	1957
1.50 - 2.49	7.50	1333	471	1804
2.50 – 4.99	7.50	1125	650	1775
5.00 – 7.49				
7.50 +				
Average	8.00	1312	579	1891

Table-4.2C. Per acre seed and sowing cost by land size.

Size of land planted (HYV)	Seed		Seed sowing (Tk)	Total (Tk)
	Quantity (Kg)	Cost (Tk)		
<= 0.04	8.50	1429	1200	2629
0.05 – 0.49	8.00	1555	864	2419
0.50 – 0.99	8.00	1550	787	2337
1.00 – 1.49	7.50	1576	790	2366
1.50 - 2.49	7.50	1647	755	2402
2.50 – 4.99	7.50	1651	816	2467
5.00 – 7.49	7.50	1523	938	2461
7.50 +				
Average	8.00	1578	811	2389

Table-4.2D. Per acre seed and sowing cost by land size.

Size of land planted (Own)	Seed		Seed sowing Tk)	Total (Tk)
	Quantity (Kg)	Cost (Tk)		
<= 0.04	8.50	1471	1129	2600
0.05 – 0.49	8.00	1554	851	2406
0.50 – 0.99	7.50	1470	742	2213
1.00 – 1.49	7.50	1507	768	2275
1.50 - 2.49	7.50	1583	723	2306
2.50 – 4.99	7.50	1631	845	2476
5.00 – 7.49	7.50	1523	938	2461
7.50 +				
Average	7.50	1537	793	2330

Table-4.2E. Per acre seed and sowing cost by land size.

Size of land planted (Others)	Seed		Seed sowing (Tk)	Total (Tk)
	Quantity (Kg)	Cost (Tk)		
<= 0.04	9.00	1250	800	2050
0.05 – 0.49	8.00	1497	818	2315
0.50 – 0.99	8.00	1619	807	2426
1.00 – 1.49	8.00	1683	781	2464
1.50 - 2.49	7.50	1708	714	2422
2.50 – 4.99	7.50	1414	629	2043
5.00 – 7.49				
7.50 +				
Average	8.00	1597	778	2375

Table-4.3A. Per acre insecticide, irrigation and others cost by land size.

(Fig in Tk)

Size of land planted (Combined)	Insecticide	Irrigation	Others	Total
<= 0.04	190	1429	286	1905
0.05 – 0.49	446	1217	315	1978
0.50 – 0.99	483	1246	357	2086
1.00 – 1.49	494	1128	346	1968
1.50 - 2.49	415	1169	381	1964
2.50 – 4.99	556	1111	400	2067
5.00 – 7.49	441	1016	430	1887
7.50 +				
Average	471	1189	352	2012

Table-4.3B. Per acre insecticide, irrigation and others cost by land size.

(Fig in Tk)

Size of land planted (Composite)	Insecticide	Irrigation	Others	Total
<= 0.04	0	1143	250	1343
0.05 – 0.49	359	1188	156	1703
0.50 – 0.99	592	1076	248	1916
1.00 – 1.49	427	1191	135	1753
1.50 - 2.49	235	1196	373	1804
2.50 – 4.99	500	1000	375	1875
5.00 – 7.49				
7.50 +				
Average	431	1132	248	1811

Table-4.3C. Per acre insecticide, irrigation and others cost by land size.

(Fig in Tk)

Size of land planted (HYV)	Insecticide	Irrigation	Others	Total
<= 0.04	286	1571	429	2286
0.05 – 0.49	454	1219	329	2002
0.50 – 0.99	472	1564	368	2104
1.00 – 1.49	501	1122	367	1989
1.50 - 2.49	439	1165	382	1986
2.50 – 4.99	565	1128	404	2096
5.00 – 7.49	441	1016	430	1887
7.50 +				
Average	475	1196	363	2034

Table-4.3D. Per acre insecticide, irrigation and others cost by land size of maize crops,2008-09

(Fig in Tk)

Size of land planted (Own)	Insecticide	Irrigation	Others	Total
<= 0.04	235	1294	353	1882
0.05 – 0.49	448	1188	332	1968
0.50 – 0.99	455	1259	361	2075
1.00 – 1.49	485	1056	336	1877
1.50 - 2.49	440	1135	384	1958
2.50 – 4.99	611	1119	459	2188
5.00 – 7.49	441	1016	430	1887
7.50 +				
Average	471	1165	363	1998

Table-4.3E. Per acre insecticide, irrigation and others cost by land size of maize crops, 2008-09

(Fig in Tk)

Size of land planted (others)	Insecticide	Irrigation	Others	Total
<= 0.04	0	2000	0	2000
0.05 – 0.49	437	1335	246	2018
0.50 – 0.99	531	1224	351	2106
1.00 – 1.49	518	1303	372	2193
1.50 - 2.49	320	1296	370	1987
2.50 – 4.99	380	1086	214	1680
5.00 – 7.49				
7.50 +				
Average	471	1259	323	2052

Table-4.4A. Per acre quantity (Kg) of fertilizer used and cost by Size of land planted of maize crops, 2008-09

Size of land planted (Combined)	Urea		TSP		Organic Cost (Tk)	Others (Tk)	Total (Tk)
	Qty(Kg)	Cost (Tk)	Qty(Kg)	Cost (Tk)			
<= 0.04	67	871	19	181	381	233	1667
0.05 – 0.49	96	1164	20	170	391	240	1965
0.50 – 0.99	90	1083	14	124	264	295	1766
1.00 – 1.49	84	1008	14	132	301	421	1861
1.50 - 2.49	83	1018	13	144	304	497	1963
2.50 – 4.99	77	927	14	154	218	477	1775
5.00 – 7.49	98	1172	0	0	0	552	1724
7.50 +							
Average	89	1069	15	142	302	353	1867

Table-4.4B. Per acre quantity (Kg) of fertilizer used and cost by size of land planted.

Size of land planted (Composite)	Urea		TSP		Organic Cost (Tk)	Others (Tk)	Total (Tk)
	Qty(Kg)	Cost (Tk)	Qty(Kg)	Cost (Tk)			
<= 0.04	71	1071	14	214	214	129	1629
0.05 – 0.49	98	1181	22	228	315	292	2015
0.50 – 0.99	68	801	6	72	127	400	1400
1.00 – 1.49	58	708	11	161	438	445	1752
1.50 - 2.49	61	761	6	89	200	371	1421
2.50 – 4.99	50	750	10	188	125	400	1463
5.00 – 7.49							
7.50 +							
Average	70	861	11	143	197	376	1576

Table-4.4C. Per acre quantity (Kg) of fertilizer used & cost by land size of maize crops, 2008-09

Size of land planted (HYV)	Urea		TSP		Organic Cost (Tk)	Others (Tk)	Total (Tk)
	Qty(Kg)	Cost (Tk)	Qty(Kg)	Cost (Tk)			
<= 0.04	64	771	21	164	464	286	1686
0.05 – 0.49	96	1163	19	165	397	235	1961
0.50 – 0.99	92	1112	14	130	278	285	1804
1.00 – 1.49	86	1036	14	129	288	419	1872
1.50 - 2.49	86	1054	14	152	345	514	2064
2.50 – 4.99	82	955	15	148	233	489	1824
5.00 – 7.49	98	1172	0	0	0	552	1724
7.50 +							
Average	91	1091	16	142	313	351	1897

Table-4.4D. Per acre quantity (Kg) of fertilizer used and cost by size of land planted.

Size of land planted (Own)	Urea		TSP		Organic Cost (Tk)	Others (Tk)	Total (Tk)
	Qty(Kg)	Cost (Tk)	Qty(Kg)	Cost (Tk)			
<= 0.04	65	812	18	135	471	288	1706
0.05 – 0.49	97	1169	20	166	405	246	1986
0.50 – 0.99	95	1151	15	142	267	248	1809
1.00 – 1.49	81	971	15	146	290	433	1840
1.50 - 2.49	86	1051	13	139	291	475	1956
2.50 – 4.99	79	922	17	168	264	554	1908
5.00 – 7.49	98	1172	0	0	0	552	1724
7.50 +							
Average	90	1087	16	149	311	353	1899

Table-4.4E. Per acre quantity (Kg) of fertilizer used and cost by size of land planted.

Size of land planted (Others)	Urea		TSP		Organic Cost (Tk)	Others (Tk)	Total (Tk)
	Qty(Kg)	Cost (Tk)	Qty(Kg)	Cost (Tk)			
<= 0.04	75	1125	22	375	0	0	1500
0.05 – 0.49	95	1147	20	190	330	213	1880
0.50 – 0.99	81	966	11	93	258	375	1693
1.00 – 1.49	92	1100	10	97	327	389	1914
1.50 - 2.49	73	896	16	165	349	579	1990
2.50 – 4.99	71	943	9	107	271	229	1550
5.00 – 7.49							
7.50 +							
Average	84	1019	13	124	280	354	1776

Table-4.5A. Per acre cost of weeding, harvesting, thrashing & others cost by size of land planted.

Size of land planted (Combined)	Weeding	Harvesting	Thrashing	Others	Total
<= 0.04	1500	1652	919	429	4500
0.05 – 0.49	1383	1621	886	539	4430
0.50 – 0.99	1256	1579	822	521	4178
1.00 – 1.49	1311	1468	817	443	4040
1.50 - 2.49	1275	1513	782	321	3892
2.50 – 4.99	1231	1422	805	406	3865
5.00 – 7.49	1200	2000	1000	244	4444
7.50 +					
Average	1301	1554	835	468	4159

Table-4.5B. Per acre cost of weeding, harvesting, thrashing & others cost by size of land planted.

Size of land planted(Composite)	Weeding	Harvesting	Thrashing	Others	Total
<= 0.04	1357	1100	900	0	3357
0.05 – 0.49	1152	1002	667	190	3011
0.50 – 0.99	1000	1013	600	390	3003
1.00 – 1.49	1500	1046	472	0	3018
1.50 - 2.49	1373	1029	529	0	2931
2.50 – 4.99	1250	1100	600	150	3100
5.00 – 7.49					
7.50 +					
Average	1218	1031	584	176	3009

Table-4.5C. Per acre cost of weeding, harvesting, thrashing & others cost by size of land planted.

Size of land planted (HYV)	Weeding	Harvesting	Thrashing	Others	Total
<= 0.04	1571	1929	929	643	5071
0.05 – 0.49	1404	1675	906	570	4554
0.50 – 0.99	1283	1637	845	535	4300
1.00 – 1.49	1293	1508	850	486	4138
1.50 - 2.49	1261	1579	817	365	4022
2.50 – 4.99	1228	1473	838	446	3985
5.00 – 7.49	1200	2000	1000	244	4444
7.50 +					
Average	1310	1609	862	499	4280

Table-4.5D. Per acre cost of weeding, harvesting, thrashing & others cost by size of land planted.

Size of land planted (Own)	Weeding	Harvesting	Thrashing	Others	Total
<= 0.04	1559	1782	924	529	4794
0.05 – 0.49	1380	1633	895	524	4432
0.50 – 0.99	1242	1612	813	498	4166
1.00 – 1.49	1299	1478	830	429	4037
1.50 - 2.49	1262	1579	817	363	4021
2.50 – 4.99	1232	1510	850	506	4097
5.00 – 7.49	1200	2000	1000	244	4444
7.50 +					
Average	1296	1590	850	469	4205

Table-4.5E. Per acre cost of weeding, harvesting, thrashing & others cost by size of land planted.

Size of land planted (Others)	Weeding	Harvesting	Thrashing	Others	Total
<= 0.04	1250	1100	900	0	3250
0.05 – 0.49	1398	1571	850	605	4423
0.50 – 0.99	1280	1522	836	560	4198
1.00 – 1.49	1342	1443	784	478	4047
1.50 - 2.49	1323	1266	649	164	3402
2.50 – 4.99	1229	1143	664	86	3121
5.00 – 7.49					
7.50 +					
Average	1316	1454	793	466	4029

Table-4.6A.Number of labour engaged & cost in weeding by size of land planted.

size of land planted (Combined)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	12	5	17	1500
0.05 – 0.49	6	9	15	1383
0.50 – 0.99	2	7	9	1256
1.00 – 1.49	1	7	8	1311
1.50 - 2.49	2	7	9	1275
2.50 – 4.99	2	6	8	1231
5.00 – 7.49	1	6	7	1200
7.50 +				
Average	3	8	11	1301

Table-4.6B. Number of labour engaged & cost in weeding by size of land planted.

size of land planted (Composite)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	16	0	16	1357
0.05 – 0.49	9	4	13	1152
0.50 – 0.99	3	6	9	1000
1.00 – 1.49	2	6	8	1500
1.50 - 2.49	2	6	8	1373
2.50 – 4.99	2	6	8	1250
5.00 – 7.49				
7.50 +				
Average	5	4	9	1218

Table-4.6C. Number of labour engaged & cost in weeding by size of land planted.

Size of land planted (HYV)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	12	5	17	1571
0.05 – 0.49	6	9	15	1404
0.50 – 0.99	2	7	9	1283
1.00 – 1.49	1	8	9	1293
1.50 - 2.49	2	7	9	1261
2.50 – 4.99	2	6	8	1228
5.00 – 7.49	1	6	7	1200
7.50 +				
Average	3	8	11	1310

Table-4.6D.Number of labour engaged & cost in weeding by size of land planted.

Size of land planted (Own)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	12	5	17	1559
0.05 – 0.49	6	10	16	1380
0.50 – 0.99	2	7	9	1242
1.00 – 1.49	1	7	8	1299
1.50 - 2.49	1	7	8	1262
2.50 – 4.99	1	7	8	1232
5.00 – 7.49	1	6	7	1200
7.50 +				
Average	3	8	11	1296

Table-4.6E.Number of labour engaged & cost in weeding by size of land planted.

Size of land planted(Others)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	11	6	17	1250
0.05 – 0.49	6	8	14	1398
0.50 – 0.99	3	6	9	1280
1.00 – 1.49	2	7	9	1342
1.50 - 2.49	3	6	9	1323
2.50 – 4.99	3	6	9	1229
5.00 – 7.49				
7.50 +				
Average	4	6	10	1316

Table-4.7A.Number of labour engaged & cost in harvesting by size of land planted.

Size of land planted(Combined)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	10	7	17	1652
0.05 – 0.49	8	7	15	1621
0.50 – 0.99	4	9	13	1579
1.00 – 1.49	3	9	12	1468
1.50 - 2.49	1	10	11	1513
2.50 – 4.99	1	9	10	1422
5.00 – 7.49	1	9	10	2000
7.50 +				
Average	4	10	14	1554

Table-4.7B.Number of labour engaged in harvesting by size of land planted.

Size of land planted(Composite)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	12	5	17	1100
0.05 – 0.49	7	7	14	1002
0.50 – 0.99	5	7	12	1013
1.00 – 1.49	4	6	10	1046
1.50 - 2.49	2	8	10	1029
2.50 – 4.99	1	9	10	1100
5.00 – 7.49				
7.50 +				
Average	4	7	11	1031

Table-4.7C.Number of labour engaged & cost in harvesting by size of land planted.

Size of land planted(HYV)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	10	7	17	1929
0.05 – 0.49	6	10	16	1675
0.50 – 0.99	4	9	13	1637
1.00 – 1.49	3	10	13	1508
1.50 - 2.49	1	10	11	1579
2.50 – 4.99	1	10	11	1473
5.00 – 7.49	0	10	10	2000
7.50 +				
Average	4	9	13	1609

Table-4.7D. Number of labour engaged in harvesting by size of land planted.

Size of land planted(Own)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	10	8	18	1782
0.05 – 0.49	5	11	15	1633
0.50 – 0.99	3	11	14	1612
1.00 – 1.49	2	12	14	1478
1.50 - 2.49	0	13	13	1579
2.50 – 4.99	0	12	12	1510
5.00 – 7.49	0	11	11	2000
7.50 +				
Average	4	11	15	1590

Table-4.7E. Number of labour engaged & cost in harvesting by size of land planted.

Size of land planted(Others)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	10	5	15	1100
0.05 – 0.49	7	8	15	1571
0.50 – 0.99	4	9	13	1522
1.00 – 1.49	3	9	12	1443
1.50 - 2.49	1	8	9	1266
2.50 – 4.99	1	7	8	1143
5.00 – 7.49				
7.50 +				
Average	4	8		1454

Table-4.8A.Number of labour engaged & cost in thrashing by size of land planted.

Size of land planted(Combined)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	6	5	11	919
0.05 – 0.49	4	5	9	886
0.50 – 0.99	3	4	7	822
1.00 – 1.49	2	5	7	817
1.50 - 2.49	1	6	7	782
2.50 – 4.99	1	6	7	805
5.00 – 7.49	1	6	7	1000
7.50 +				
Average	3	6	9	835

Table-4.8B.Number of labour engaged & cost in thrashing by size of land planted.

Size of land planted(Composite)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	6	2	8	900
0.05 – 0.49	4	2	6	667
0.50 – 0.99	2	4	6	600
1.00 – 1.49	1	3	4	472
1.50 - 2.49	1	3	4	529
2.50 – 4.99	1	3	4	600
5.00 – 7.49				
7.50 +				
Average	2	3	5	584

Table-4.8C.Number of labour engaged & cost in thrashing by size of land planted.

Size of land planted (HYV)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	8	4	12	929
0.05 – 0.49	6	4	11	906
0.50 – 0.99	3	5	8	845
1.00 – 1.49	2	6	8	850
1.50 - 2.49	1	7	8	817
2.50 – 4.99	1	7	8	838
5.00 – 7.49		7	7	1000
7.50 +				
Average	3	6	10	862

Table-4.8D. Number of labour engaged & cost in thrashing by size of land planted.

Size of land planted(Own)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	6	5	11	924
0.05 – 0.49	4	5	9	895
0.50 – 0.99	3	5	8	813
1.00 – 1.49	1	7	8	830
1.50 - 2.49	1	7	8	817
2.50 – 4.99	1	7	8	850
5.00 – 7.49		7	7	1000
7.50 +				
Average	3	6	9	

Table-4.8E.Number of labour engaged & cost in Thrashing by size of land planted.

Size of land planted(Others)	Number of labour			Cost (Tk)
	Family	Hired	Total	
<= 0.04	7	4	11	900
0.05 – 0.49	6	4	10	850
0.50 – 0.99	2	6	8	836
1.00 – 1.49	1	5	6	784
1.50 - 2.49	1	4	5	649
2.50 – 4.99	1	4	5	664
5.00 – 7.49				
7.50 +				
Average	2	4	6	793

Table-4.9A. Per acre major head wise production cost by size of land planted.

Size of land Planted (Combined)	Major head wise Production cost					
	Land preparation	Seed related	Insecticide, irrigation & others	Fertilizer	Weeding, harvesting, thrashing & others	Total
<= 0.04	2286	2495	1905	1667	4500	12853
0.05 – 0.49	2129	2388	1978	1965	4430	12893
0.50 – 0.99	1723	2291	2086	1766	4178	12244
1.00 – 1.49	1843	2330	1968	1861	4040	12042
1.50 - 2.49	1830	2330	1964	1963	3892	11979
2.50 – 4.99	1728	2373	2067	1775	3865	11808
5.00 – 7.49	1848	2461	1887	1724	4444	12364
7.50 +						
Average	1878	2342	2012	1867	4159	12258

Table-4.9B. Per acre major head wise production cost by size of land planted.

Size of land planted (Composite)	Major head wise Production cost					
	Land preparation	Seed related	Insecticid, irrigation & others	Fertilizer	Weeding, harvesting, thrashing & others	Total
<= 0.04	2143	2229	1143	1629	3357	10501
0.05 – 0.49	2084	2033	1703	2015	3011	10846
0.50 – 0.99	1875	1846	1916	1400	3003	10040
1.00 – 1.49	1844	1957	1753	1752	3018	10324
1.50 - 2.49	1951	1804	1804	1421	2931	9911
2.50 – 4.99	1875	1775	1875	1563	3100	10180
5.00 – 7.49						
7.50 +						
Average	1935	1891	1811	1576	3009	10222

Table-4.9C. Per acre major head wise production cost by size of land planted.

Size of land planted (HYV)	Major head wise Production cost					
	Land preparation	Seed related	Insecticide, irrigation & others	Fertilizer	Weeding, harvesting, thrashing & others	Total
<= 0.04	2357	2629	2286	1686	5071	14029
0.05 – 0.49	2132	2419	2002	1961	4554	13068
0.50 – 0.99	1707	2337	2104	1804	4330	12282
1.00 – 1.49	1843	2366	1989	1872	4138	12208
1.50 - 2.49	1813	2402	1986	2064	4022	12287
2.50 – 4.99	1705	2467	2096	1824	3985	12077
5.00 – 7.49	1848	2461	1887	1724	4444	12366
7.50 +						
Average	1872	2389	2034	1897	4280	12472

Table-4.9D. Per acre major head wise production cost by size of land planted.

Size of land planted(Own)	Major head wise Production cost					
	Land preparation	Seed related	Insecticide, irrigation & others	Fertilizer	Weeding, harvesting, thrashing & others	Total
<= 0.04	2353	2600	1882	1706	4794	13335
0.05 – 0.49	2125	2406	1968	1986	4432	12912
0.50 – 0.99	1625	2213	2075	1809	4166	11886
1.00 – 1.49	1763	2275	1877	1840	4037	11792
1.50 - 2.49	1767	2306	1958	1956	4021	12008
2.50 – 4.99	1813	2476	2188	1908	4097	12482
5.00 – 7.49	1848	2461	1887	1724	4444	12364
7.50 +						
Average	1851	2330	1998	1899	4205	12283

Table-4.9E. Per acre major head wise production cost by size of land planted.

Size of land planted (Others)	Major head wise Production cost					
	Land preparation	Seed related	Insecticid, irrigation & others	Fertilizer	Weeding, harvesting, thrashing & others	Total
<= 0.04	2000	2050	2000	1500	3250	10800
0.05 – 0.49	2143	2315	2018	1880	4423	12779
0.50 – 0.99	1890	2426	2106	1693	4198	12313
1.00 – 1.49	2033	2464	2193	1914	4047	12651
1.50 - 2.49	2067	2422	1987	1990	3402	11868
2.50 – 4.99	1857	2043	1680	1650	3121	10351
5.00 – 7.49						
7.50 +						
Average	1953	2375	2052	1776	4029	

Table-4.10A.Per acre production & by production value and by size of land planted.

Size of land planted(Combined)	Production		By Production		Total Value (Tk)
	Qty.(Kg)	Value (Tk)	Qty.(Kg)	Value (Tk)	
<= 0.04	2248	22805	1467	1467	24271
0.05 – 0.49	2593	27369	1286	1606	28974
0.50 – 0.99	2591	26371	1441	1473	27843
1.00 – 1.49	2299	23068	1314	1289	24358
1.50 - 2.49	2148	23863	1342	1297	25159
2.50 – 4.99	2504	26387	1362	1367	27755
5.00 – 7.49	2288	27437	1270	1133	28570
7.50 +					
Average	2464	25738	1350	1437	27175

Table-4.10B.Per acre production & by production value and by size of land planted.

Size of land planted (Composite)	Production		By Production		Total Value (Tk)
	Qty.(Kg)	Value (Tk)	Qty.(Kg)	Value (Tk)	
<= 0.04	1457	17486	1257	1257	18743
0.05 – 0.49	1420	14028	1340	1367	15395
0.50 – 0.99	1481	15139	1514	1211	16350
1.00 – 1.49	1461	14376	1000	800	15176
1.50 - 2.49	1351	12745	1176	1035	13780
2.50 – 4.99	1300	13000	1000	800	13800
5.00 – 7.49					
7.50 +					
Average	1414	14025	1257	1094	15119

Table-4.10C.Per acre production & by production value and by size of land planted.

Size of land planted(HYV)	Production		By Production		Total Value(Tk)
	Qty.(Kg)	Value (Tk)	Qty.(Kg)	Value (Tk)	
<= 0.04	2643	26964	1571	1571	28636
0.05 – 0.49	2695	28531	1281	1626	30158
0.50 – 0.99	2707	27535	1433	1500	29034
1.00 – 1.49	2378	24886	1343	1335	25221
1.50 - 2.49	2256	25377	1365	1332	26709
2.50 – 4.99	2694	28497	1421	1457	29963
5.00 – 7.49	2288	27437	1270	1133	28570
7.50 +					
Average	2574	26968	1360	1473	28441

Table-4.10D. Per acre production & by production value and by size of land planted.

size of land planted(own)	Production		By Production		Total Value (Tk)
	Qty.(Kg)	Value (Tk)	Qty.(Kg)	Value (Tk)	
<= 0.04	2482	23935	1576	1576	25512
0.05 – 0.49	2654	27715	1299	1652	29368
0.50 – 0.99	2754	27802	1389	1337	29163
1.00 – 1.49	2438	23830	1213	1197	25027
1.50 - 2.49	2068	24075	1414	1288	25363
2.50 – 4.99	2532	27602	1518	1577	29189
5.00 – 7.49	2288	27437	1270	1133	28570
7.50 +					
Average	2531	26504	1346	1424	27928

Table-4.10E.Per acre production & by production value and by size of land planted.

Size of land planted(Others)	Production		By Production		Total Value (Tk)
	Qty.(Kg)	Value (Tk)	Qty.(Kg)	Value (Tk)	
<= 0.04	1800	21000	1000	1000	22000
0.05 – 0.49	2341	28942	1230	1414	27365
0.50 – 0.99	2318	23923	1528	1701	25634
1.00 – 1.49	1946	21136	1570	1525	22661
1.50 - 2.49	2450	23062	1072	1329	24390
2.50 – 4.99	2414	22471	871	697	23169
5.00 – 7.49					
7.50 +					
Average	2276	23597	1362	1476	25073

Table-4.11A. Per acre number of plots of tenure ship by size of land planted

Size of land planted (Combined)	Own	Share	Mortgage	Lease	Others	Total
<= 0.04	5	1	0	0	0	6
0.05 – 0.49	305	30	17	13	7	372
0.50 – 0.99	79	25	4	8	13	129
1.00 – 1.49	35	8		4	3	50
1.50 - 2.49	19	2		1	2	24
2.50 – 4.99	8	1			1	10
5.00 – 7.49	1					1
7.50 +						
Average	452	67	21	26	26	592

Table-4.11B. Per acre number of plots of tenure ship by size of land planted.

Size of land planted(Composite)	Own	Share	Mortgage	Lease	Others	Total
<= 0.04	1	1	0	0	0	2
0.05 – 0.49	24	4	2	0	3	33
0.50 – 0.99	3	0		1	7	11
1.00 – 1.49	1	1			2	4
1.50 - 2.49	1				2	3
2.50 – 4.99					1	1
5.00 – 7.49						
7.50 +						
Average	30	6	2	1	15	54

Table-4.11C. Per acre number of plots of tenure ship by size of land planted.

Size of land planted (HYV)	Own	Share	Mortgage	Lease	Others	Total
<= 0.04	4	0	0	0	0	4
0.05 – 0.49	281	26	15	13	4	339
0.50 – 0.99	76	25	4	7	6	118
1.00 – 1.49	34	7		4	1	46
1.50 - 2.49	18	2		1		21
2.50 – 4.99	8	1				9
5.00 – 7.49	1					1
7.50 +						
Average	422	61	19	25	11	538

Table-4.12A.Total sample area in acres of tenure ship by size of land planted.

Size of land planted (Combined)	Own	Share	Mortgage	Lease	Others	Total
<= 0.04	0.17	0.04				0.21
0.05 – 0.49	68.16	6.97	3.91	3.58	2.09	84.71
0.50 – 0.99	52.75	14.21	2.17	5.26	9.24	83.63
1.00 – 1.49	37.12	8.00		4.24	3.40	52.76
1.50 - 2.49	33.63	3.81		1.50	3.60	42.54
2.50 – 4.99	22.39	3.00			4.00	29.39
5.00 – 7.49	5.12	0				5.12
7.50 +						
Average	219.34	36.03	6.08	14.58	22.33	298.36

Table-4.12B.Total sample area in acres of tenure ship by size of land planted.

Size of land planted(Composite)						Total
	Own	Share	Mortgage	Lease	Others	
<= 0.04	0.03					0.07
0.05 – 0.49	4.50	0.04			0.96	6.79
0.50 – 0.99	1.80	1.07	0.26		5.60	7.90
1.00 – 1.49	1.05	0		0.50	2.40	4.45
1.50 - 2.49	1.50	1.00			3.60	5.10
2.50 – 4.99					4.00	4.00
5.00 – 7.49						
7.50 +						
Average	8.88	2.11	0.26	0.50	16.56	28.31

Table-4.12C. Total sample area in acres of tenure ship by size of land planted.

Size of land planted(HYV)						Total
	Own	Share	Mortgage	Lease	Others	
<= 0.04	0.14	5.90	3.65	3.58	1.13	0.14
0.05 – 0.49	63.66	14.21	2.17	4.76	3.64	77.92
0.50 – 0.99	50.95	7.00		4.24	1.00	75.73
1.00 – 1.49	36.07	3.81		1.50		48.31
1.50 - 2.49	32.13	3.00				37.44
2.50 – 4.99	22.39					25.39
5.00 – 7.49	5.12					5.12
7.50 +						
Average	210.46	33.92	5.82	14.08	5.77	270.05

Table-4.13A.Division wise number of plots of tenure ship by size of land planted.

Size of land planted(Combined)	Divsion						Total
	Barisal	Chittagang	Dhaka	Khulna	Rajshahi	Sylhet	
<= 0.04	1			1	4		6
0.05 – 0.49	17	70	26	71	188		372
0.50 – 0.99		18	6	7	98		129
1.00 – 1.49		6			44		50
1.50 - 2.49		6			18		24
2.50 – 4.99		3			7		10
5.00 – 7.49					1		1
7.50 +							
Average	18	103	32	79	360		592

Table-4.13B.Division wise number of plots of tenure ship by size of land planted.

Size of land planted(Composite)	Divsion						Total
	Barisal	Chittagang	Dhaka	Khulna	Rajshahi	Sylhet	
<= 0.04					2		2
0.05 – 0.49	1	4	4		24		33
0.50 – 0.99		8		1	2		11
1.00 – 1.49		2			2		4
1.50 - 2.49		2			1		3
2.50 – 4.99		1					1
5.00 – 7.49							
7.50 +							
Average	1	17	4	1	31		54

Table-4.13C. Division wise number of plots of tenure ship by size of land planted.

Size of land planted(HYV)	Divsion						Total
	Barisal	Chittagang	Dhaka	Khulna	Rajshahi	Sylhet	
<= 0.04	1			1	2		4
0.05 – 0.49	16	66	22	71	164		339
0.50 – 0.99		10	6	6	96		118
1.00 – 1.49		4			42		46
1.50 - 2.49		4			17		21
2.50 – 4.99		2			7		9
5.00 – 7.49					1		1
7.50 +							
Average	17	86	28	78	329		538

Table-4.14A. Division wise sample area (acres) covered in tenure ship by size of land planted.

Size of land planted (Combined)	Divsion						Total
	Barisal	Chittagang	Dhaka	Khulna	Rajshahi	Sylhet	
<= 0.04	0.04			0.03	0.14		0.21
0.05 – 0.49	3.02	16.28	4.71	15.43	45.27		84.71
0.50 – 0.99		11.75	3.66	4.59	63.63		83.63
1.00 – 1.49		6.80			45.96		52.76
1.50 - 2.49		11.30			31.24		42.54
2.50 – 4.99		10.00			19.39		29.39
5.00 – 7.49					5.12		5.12
7.50 +							
Average	3.06	56.13	8.37	20.05	210.75		298.36

Table-4.14A. Division wise sample area (acres) covered in tenure ship by size of land planted.

Size of land planted (Composite)	Divsion						Total
	Barisal	Chittagang	Dhaka	Khulna	Rajshahi	Sylhet	
<= 0.04					0.07		0.07
0.05 – 0.49	0.24	1.60	0.51		4.44		6.79
0.50 – 0.99		6.40		0.50	1.00		7.90
1.00 – 1.49		2.40			2.05		4.45
1.50 - 2.49		3.60			1.50		5.10
2.50 – 4.99		4.00					4.00
5.00 – 7.49							
7.50 +							
Average	0.24	18.00	0.51	0.50	9.06		28.31

Table-4.14A. Division wise sample area (acres) covered in tenure ship by size of land planted.

Size of land planted (HYV)	Divsion						Total
	Barisal	Chittagang	Dhaka	Khulna	Rajshahi	Sylhet	
<= 0.04	0.04			0.03	0.07		0.14
0.05 – 0.49	2.78	14.68	4.20	15.43	40.83		77.92
0.50 – 0.99		5.35	3.66	4.09	62.63		75.73
1.00 – 1.49		4.40			43.91		48.31
1.50 - 2.49		7.70			29.74		37.44
2.50 – 4.99		6.00			19.39		25.39
5.00 – 7.49					5.12		5.12
7.50 +							
Average	2.82	38.13	7.86	19.55	201.69		270.05

Annexure-A

Concepts and Definitions

Mauza:
Mauza is the demarcated lowest administrative territorial unit having separate jurisdiction list number (J.L.No.) in the revenue records. Every mauza has its well demarcated cadastral map. Mauza should be distinguished from local village since a mauza may consist of one or more villages or part of a village.

Primary Sampling Units (PSUs):
100 Upzilas which have been selected at random from 64 districts are said to be PSUs.

Secondary Sampling Units (SSUs):
100 Mauzas which have been selected from 100 PSUs are said to be SSUs.

Ultimate Sampling Units (USUs):
250 households which have been selected from SSUs following the method of choosing the first one from the south-west corner of the SSU and then moving forwards following serpentine method until having 250 households are said to be USUs.

Enumeration Areas (EAs):
EAs are nothing but the SSUs.

Household (HH):
A household means a group of persons normally living together and eating in one mess (i.e. with common arrangement of cooking) with their dependents, relatives, servants etc. A household may be a one person household or a multi-person household. In other words, when a group of persons living together generally maintain a family or family like relations and take meals from the same kitchen is termed as a household. Popularly, it is descried as “Khana”. In some cases there may be more than one household in a single house or in one dwelling arrangement. Similarly, a household may have more than one house or structure or shed.

The household must be distinguished from a family which consists of blood related members who may live in different places but members of the household must share the same kitchen and live together.

Owned land:
Owned land means the area of the land owned by the holder including members of his family having a title of land with the right to determine the nature and extent of its use and to transfer the same. Moreover, there might be some land over which the holder or any member of his households has owner-like possession. This type of land was included in the area of owned land. The land held by the holder in owner like possession, can be operated by him in the same way as owned land although the holder does not possess a title of ownership.

Share Cropping:
Land under share cropping is treated as the land which is cultivated under the condition of sharing the crops between land owner and the cultivator. The ratio of share cropping might vary from place to place. It might be one third (1/3) or half (1/2) or one two-thirds (2/3) between owner and cultivator.

Mortgage:
The land which is taken in exchange of money paid by the mortgagee to the land owner for a fixed period of time under the condition that land would be released upon refunding the money to the mortgagee by the owner is considered as the land under mortgage.

Lease:
The land which is taken by the cultivator from the owner in exchange of a certain amount of money for one year or for any period of time for the purpose of cultivating crop is treated as land under lease. Under this criterion, land will automatically be released from the occupancy of the cultivator after the certain period of time.

Others:
The land which does not satisfy any of the four criterions mentioned earlier is treated as the land under others.

Plot:

Usually land is divided into many pieces for the purposes of cultivation or distributions among the owners of land or making houses. These pieces are commonly called plots. A plot might comprise of land under many identification numbers (Dag Number) or there might have many plots under the land of single identification number. Even a household has many plots which are situated in different mauzas. It is mentionable that under this survey plot means the land in which Maize has been cultivated during the survey year.

Annexure- B

Statement-I

Crop	2005Cropped area (acres)	Cropping percent (p)	Minimum Sample size (n)	All farmers in the Mouza(n1)
Amon (4)	10488754	35.00	612	9625
Boro (3)	9272497	30.90	575	8498
Aus (2)	2670787	8.90	220	2448
Wheat	897403	2.99	78	823
Maize	217060	0.72	19	198
Pulses (10)	700651	2.34	60	644
Oil Seeds (12)	1217233	4.06	103	1116
Jute (3)	1117109	3.72	96	1023
Potato	811061	2.70	71	742
Onion	265136	0.88	23	242
Total			1857	25358

Gross cropped area – 2,99,90,170 acres

Annexure-c

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
বাংলাদেশ পরিসংখ্যান ব্যুরো
কৃষি দাগগুচ্ছ হালনাগাদকরণ ও সম্প্রসারণ এবং উৎপাদন খরচ জরিপ প্রকল্প
পরিসংখ্যান ভবন (৭ম তলা, ব- ক-২)
ই-২৭/এ, আগারগাঁও, ঢাকা-১২০৭।

ভুট্টা উৎপাদন খরচ জরিপ, ২০০৯

প্রথম অংশ

খানার পরিচিতি

খানার ক্রমিক নম্বর ঃ☐☐☐

খানা প্রধানের নাম ঃ ---------- পিতা/স্বামীর নাম ঃ ----------

জেলা _____ কোড☐☐ উপজেলা _____ কোড ☐☐

ইউনিয়ন_____ কোড ☐☐ মৌজা/গ্রাম _____ কোড☐☐☐

দ্বিতীয় অংশ

১। ভুট্টার প্রকারভেদে জমির খন্ডের পরিমাণ, মালিকানা, চাষের ধরন এবং খরচ (টাকা)

খন্ড	ভুট্টার প্রকার (কোড)	জমির পরিমাণ (কোড)	জমির মালিকানা (কোড)	লীজ নেয়া হলে বাৎসরিক কত টাকা দিতে হয়	চাষের ধরন (নিজস্ব হলে বাজার দরে লিখতে হবে)					মোট (টাকা)
					লাঙ্গল		যান্ত্রিক		অন্যান্য	
					সংখ্যা	খরচ (টাকা)	সংখ্যা	খরচ (টাকা)	খরচ (টাকা)	
১	২	৩	৪	৫	৬	৭	৮	৯	১০	১১
১ম										
২য়										
৩য়										
৪র্থ										
৫ম										

ভুট্টার প্রকারের কোড ঃ কম্পোজিড-১ ও হাইব্রীড-২ মালিকানা কোডঃ নিজস্ব-১, বর্গা-২, বন্ধক-৩, লীজ-৪ এবং অন্যান্য-৫

২। বীজ, বীজ বপন, কীটনাশক এবং সেচ খরচ (টাকা)

খন্ড	বীজ		বীজ বপন খরচ (টাকা)	কীটনাশক খরচ (টাকা)	সেচ খরচ (টাকা)	অন্যান্য খরচ (টাকা)	মোট খরচ (টাকা)
	পরিমাণ (কেজি)	মূল্য (টাকা)					
১	২	৩	৪	৫	৬	৭	৮
১ম							
২য়							
৩য়							
৪র্থ							
৫ম							

(পারিবারিক কর্মী হলে মজুরী বাজার দরে লিখতে হবে)

৩। সার ব্যবহারের পরিমাণ (কেজি) ও খরচ (টাকা)ঃ

খন্ড	ইউরিয়া		টিএসপি		গোবর/জৈব		অন্যান্য	মোট (টাকা)
	পরিমাণ(কেজি)	মূল্য(টাকা)	পরিমাণ(কেজি)	মূল্য(টাকা)	পরিমাণ(কেজি)	মূল্য(টাকা)	মূল্য (টাকা)	
১	২	৩	৪	৫	৬	৭	৮	৯
১ম								
২য়								
৩য়								
৪র্থ								
৫ম								

৪। নিড়ানি/আগাছা পরিস্কার, উত্তোলন, মাড়াই এবং অন্যান্য কাজে নিয়োজিত শ্রমিকের সংখ্যা ও খরচ (টাকা)

খন্ড	নিড়ানি/আগাছা পরিস্কার			উত্তোলন			মাড়াই			অন্যান্য খরচ (টাকা)	মোট খরচ (টাকা)
	শ্রমিকের সংখ্যা		খরচ (টাকা)	শ্রমিকের সংখ্যা		খরচ (টাকা)	শ্রমিকের সংখ্যা		খরচ (টাকা)		
	পারিবারিক	ভাড়া		পারিবারিক	ভাড়া		পারিবারিক	ভাড়া			
১	**২**	**৩**	**৪**	**৫**	**৬**	**৭**	**৮**	**৯**	**১০**	**১১**	**১২**
১ম											
২য়											
৩য়											
৪র্থ											
৫ম											

(পারিবারিক কর্মী হলে মজুরী বাজার দরে লিখতে হবে)

৫। উৎপাদিত ফসল (কেজি) এবং উপজাতের পরিমাণ (কেজি) ও মূল্য (টাকা)

খন্ড	ফসল (ভুট্টা)		উপজাত (ডাটি)		মোট উৎপাদিত দ্রব্যের মূল্য (টাকা)
	পরিমাণ (কেজি)	মূল্য (টাকা)	পরিমাণ (কেজি)	মূল্য (টাকা)	
১	**২**	**৩**	**৪**	**৫**	**৬**
১ম					
২য়					
৩য়					
৪র্থ					
৫ম					

৬। ভুট্টা মৌসুমে ভুট্টা চাষের জন্য এক একর জমি লীজ নিতে মালিককে কত টাকা দিতে হয়ঃ---------

তথ্য সংগ্রহকারীর নাম ----------

পদবী ----------

তারিখ ----------

সুপারভাইজারের নাম ----------

পদবী ----------

তারিখ ----------

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