Report on the Cost of Production of Potato
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
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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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Key Findings: At a glance

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1.	Percentage of household having Potato cultivation in the sample area	10.85
2.	Percentage of household growing Potato by land tenure:	
	a. Own	80.11
	b. Share cropping	3.45
	c. Mortgage	2.65
	d. Lease	13.01
	e. Others	7.00
3.	Yield of Potato per acre(in kilograms)	52.80
4.	Number of labourers employed by component for per acre production of Potato:	
	a. Seed planting	17
	b. Canal preparation	12
	c. Harvesting	19
	Total	48
5.	Number of family labourers worked for per acre Potato production	16
6.	Production cost of Potato per kilogram (in taka)	6.69
7.	Production value of Potato per kilogram (in taka)	10.49
8.	Cost of land preparation per acre (in taka):	2956
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11.	Canal related cost per acre (in taka)	1489
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	a. Urea	1709
	b. TSP	6335
	c. Oil cake	61
	d. Organic	1107
	e. Other Cost	2173
	Total	**11385**
13.	Cost of insecticides per acre (in taka)	2712
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Chapter-1

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. Presently potato crop is being treated as major crop. Potato is one of the food-stuff of the most people of the world as well as Bangladesh. Now many food items are prepared by potatoes. If we eat adequate potatoes in differed ways we would be benefited by it in one hand; on the other hand pressure on rice consumption would be decreased. The production of Potato largely depends on the use of 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 potato 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 at 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 been consistently been allocating 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 influences 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 in this regard.

Potato : A food crop.

Potato is a food crop. It is planted in the month of mid September to November and harvested in the month of mid January to March. Two types of potato are grown in our country; one is called local variety and another is HYV. Local variety potato gives low yield rate and for this reason farmers are motivated for cultivating HYV.

Production of Potato:

Bangladesh occupies most lands of the Great Bengal plane of the Ganges Delta with affluent alluvial soils. However the overall natural climatic and geographic condition of Bangladesh is blissful for growing potato. Moreover the time of Potato production is more or less free from natural hazards.

Table : Acreage, production and yield rate of Potato during the last ten years.

Year	Area in '000' acres	Production in '000' M. Tons	Yield rate M. tons
1998-99	605	2762	4.465
1999-00	601	2923	4.860
2000-01	615	3216	5.229
2001-02	587	2994	5.101
2002-03	606	3386	5.587
2003-04	669	3908	5.842
2004-05	806	4856	6.025
2005-06	744	4161	5.593
2006-07	853	5167	6.057
2007-08	993	6648	6.695

Source: Year Book of Agricultural Statistics of Bangladesh 2008.

From the table shown above, it is evident that area under Potato is increasing gradually. Per acre yield also registers upward trend. High demand of the food crop resulted in producing more Potatoes.

1.1 Scope and coverage of the survey:

Survey on the production cost of Potato paddy 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 Objectives of the survey:

The specific objectives of the survey are:

- ►to estimate per acre production cost of Potato.
- ►to estimate per kilogram production cost of Potato.

The other objectives of the survey are as follows:

- ► to know the area under Potato by land tenure
- ► to assess the cost of production of Potato by different phase
- ► to produce benchmark data on the production cost of Potato
- ► to assist the policy maker by supplying data on the cost of production of Potato in order to formulate appropriate policies for increasing the production of Potato.

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. Potato 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, having the particular crop Potato, 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 aus crop has been followed the same design as the integrated sample design for the said 10 crops. The sample design has been explained below:

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 became 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: 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 Potato 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 enumerator 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- all from the different Wings of 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 Potato as well. They discuss the matter with the farmers who grow Potato. 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 farmer 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 Potato 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 has been 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 Data collection:

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. At the first day the participants receive rigorous training on the concepts, definitions and the questionnaire and in 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 been taken place during May 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 household 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 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 very badly. During data processing following steps have been followed.

- 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:

1. Software Used: Five software 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 has 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 also done to make 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 filed for safe storage. A copy of the data set put forward to the survey authority for tabulation and analysis.

2.4 Tabulation:

Twelve tables focusing on the vital components such as total number of labours engaged in production of Potato, 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 at 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 Potato 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 involved in different stages of growing crop from sowing to harvesting. This chapter deals with the cost related components of production of potato 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.

Potato producing households(HHs):

24625 sample households were under the survey purview across the country, of which only 2671 HHs were involved in potato cultivation. The table shown below exposes that only 10.85% of HHs at national level cultivated potato 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 household having Potato crops.

Division	Total Number				
	PSU	SSU	USU(HH)	HH producing potato	% of HH producing potato
Barisal	9	9	2250	66	2.93
Chittagang	16	16	3625	407	11.23
Dhaka	25	25	6250	502	8.03
Khulna	16	16	4000	232	5.80
Rajshahi	28	28	7000	1378	19.69
Sylhet	6	6	1500	86	5.73
Bangladesh	100	100	24625	2671	10.85

It is observed in the table that the lowest percentage of HH, only 2.93% grows potato in Barisal and the highest, 19.69% in Rajshahi. In Chittagang (11.23%) a significant percentage of HHs cultivate the crop, which is above the national percentage (10.85).The crop is not evenly grown in the country.

Area under potato:

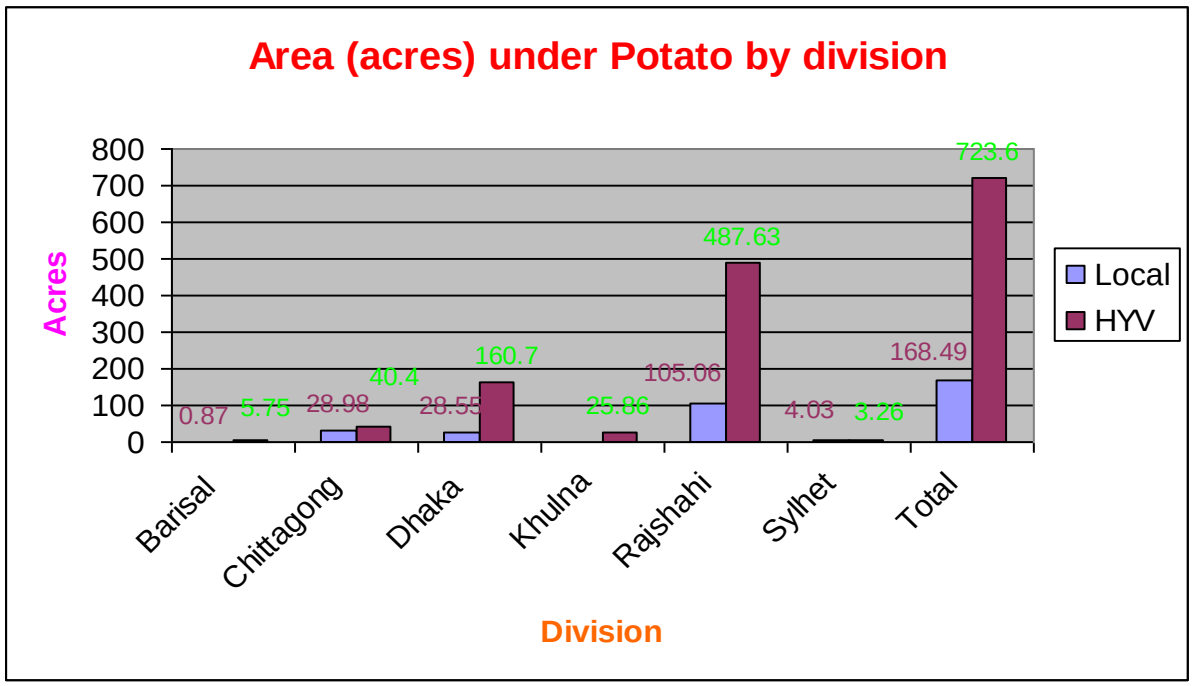
Variety wise area under potato as produced by the sample households is recorded and displayed below by division.

Table-3.2: Area (acres) under potato as recorded in the sample area by variety and by division:

Variety	Barisal	Chittagang	Dhaka	Khulna	Rajshahi	Sylhet	Total
Local	0.87	28.98	28.55	1.00	105.06	4.03	168.49
	(0.10)	(3.25)	(3.20)	(0.11)	(11.78)	(0.45)	(18.89)
HYV	5.75	40.40	160.70	25.86	487.63	3.26	723.60
	(0.64)	(4.53)	(18.01)	(2.90)	(54.66)	(0.37)	(81.11)
Total	6.62	69.38	189.25	26.86	592.69	7.89	892.09
	(0.74)	(7.78)	(21.21)	(3.01)	(66.44)	(0.82)	(100.00)

Figures in parenthesis are the percentage s of the total.

In the sample area of 24625 households across the country, 892.09 acres are found under potato cultivation. Maximum area are found in Rajshahi division (592.69 acres) followed by Dhaka (189.25 acres), Chittagang (69.38 acres) and Khulna(26.86 acres). Small areas are recorded in Barisal (6.62acres)and Sylhet (7.89 acres) divisions. Rajshahi division cultivates two thirds of (66.44%) of the total area, followed by Dhaka (21.21%), Chittagang (7.78%) and Khulna (3.01%). Areas(acres) under Potato in the sample area by type and by division are depicted in the bar-diagram below:



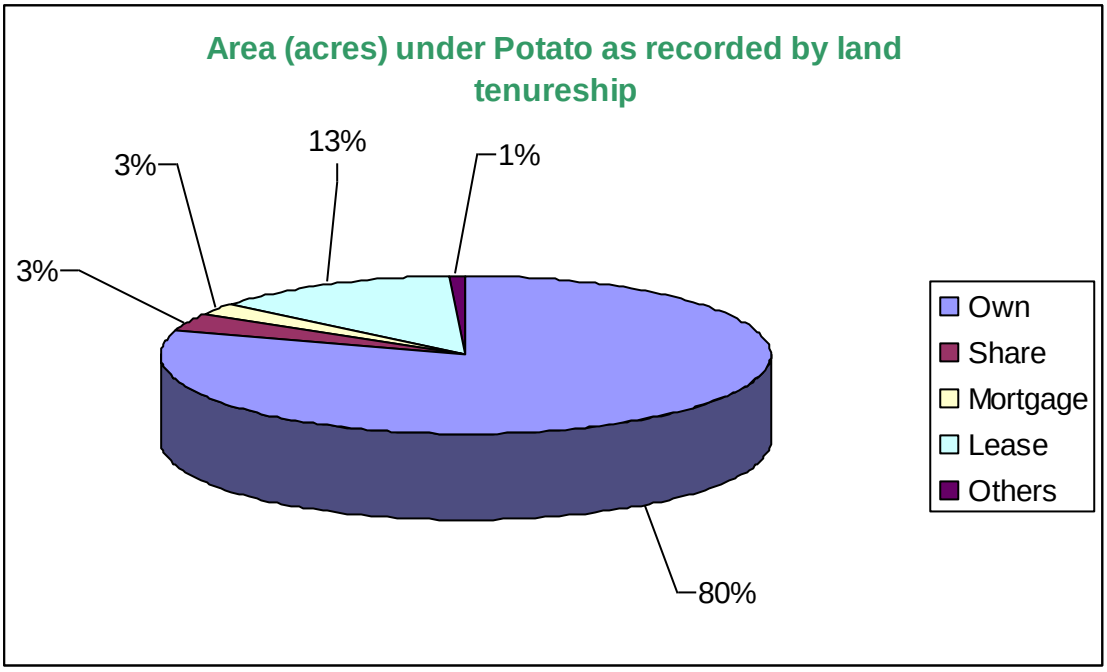
It is seen from the above table that local variety occupies 18.89% and HYV 81.11%. Here it is mentionable that BBS estimate for that year for local variety is 20% and HYV 80%.

Table-3.3: Area (acres) under potato as recorded in the sample area by variety and by land tenureship

Variety	Land tenure ship					Total
	Own	Share	Mortgage	Lease	Others	
Local	139.89 (15.68)	12.93 (1.45)	3.82 (0.43)	11.26 (1.26)	0.59 (0.06)	168.49 (18.89)
HYV	574.70 (64.43)	17.81 (2.00)	19.85 (2.22)	104.83 (11.75)	6.41 (0.72_	723.60 (81.11)
Total	714.59 (80.11)	30.74 (3.45)	23.67 (2.65)	116.09 (13.01)	7.00 (0.78)	892.09 (100.00)

Figures in parenthesis are the percentage s of the total.

The above table clearly expresses that farmers cultivated 714.59 acres under the crop in their own lands which is about 80% of the total potato lands (892.09 acres) . Cultivation of the crop on lease lands is found 116.09 acres which is about 13%. Remaining 7% area is under crop sharing, mortgage and others. Percentages of area (acres) under Potato by land tenureship are displayed in pi-chart.



Land preparation:

Land is prepared first for planting of the crop by tilling either by power tiller or by country plough. Per acre land preparation cost of potato by size of land planted is shown below.

Table-3.4: Per acre land preparation cost of potato by size of land planted.

(Fig in Tk)

Size of land planted (acres)	Total	Variety of Potato		Tenure ship	
		Local	HYV	Own	Others
<=0.04	3180	3119	3292	3167	3374
0.05-0.49	3171	3132	3194	3133	3362
0.50-0.99	2852	3180	2808	2855	2842
1.00-1.49	2837	3453	2694	2855	2773
1.50-2.49	2884	3518	2727	2834	2966
2.50-4.99	2981	-	2981	2751	3449
5.00-7.49	2781	-	2781	2783	2719
7.50+	2700	-	2700	2700	-
Average	2956	3177	2904	2932	3151

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

It is seen from the above table that per acre total land preparation cost stands at Tk 2956. Per acre land preparation cost of local variety potato is found to be higher (Tk. 3177) than that of HYV(Tk. 2904).Local variety potato is planted normally in small pieces of land and these lands are tilled by country plough which results in high cost involvement of per acre land preparation. Maximum cost is found incase of low land size planted. Per acre cost by tenure ship as furnished in the table shows lower cost for own land than that for other tenurship.

Seeds:

Table-3.5: Cost of seeds for one acre land plantation and its sowing by size of land planted

(Fig in Tk)

Size of land planted (acres)	Total	Variety of Potato		Tenure ship	
		Local	HYV	Own	Others
<=0.04	10989	9548	13009	11175	9249
0.05-0.49	11220	8821	12667	11586	11228
0.50-0.99	13035	8425	14050	13964	13689
1.00-1.49	13702	9943	13125	13777	12582
1.50-2.49	14123	9310	14528	14013	14886
2.50-4.99	13823		13823	13492	14388
5.00-7.49	13189		13189	13175	14026
7.50+	13368		13368	13368	
Average	12595	8856	13542	12457	13149

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

After the preparation of land, seeds are planted. This table shows that per acre cost of seeds with planting of seeds is taka 12595. For local variety it is Tk 8856 and HYV it is Tk 13542. Per acre cost of seeds by tenure ship is also shown in the above table. It shows that per acre of seeds and planting in own land is Tk 12457.

Canal preparation:

Table-3.6: Per acre canal preparation & etc cost by size of land planted

(Fig in Tk)

Size of land planted(acres)	Total	Variety of Potato		Tenure ship	
		Local	HYV	Own	Others
<=0.04	1956	2063	1757	1951	1987
0.05-0.49	1696	1787	1640	1668	1838
0.50-0.99	1347	1754	1292	1342	1367
1.00-1.49	1354	1718	1337	1342	1422
1.50-2.49	1298	1837	1256	1312	1253
2.50-4.99	1333		1333	1383	1249
5.00-7.49	1279		1279	1140	1424
7.50+	1133		1133	1133	
Average	1489	1793	1393	1465	1485

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

Potatos are planted in lines. In between two lines small canals are made. Upward portion of the lines are covered by dried straws etc. It is unearthed from the table that per acre total canal preparation cost is Tk 1489. Per acre cost of local variety (Tk 1793) shows to be higher than that of HYV (Tk 1393). The cost is high in case of low land size. By tenurship consideration the cost is almost same for both own and others types of land tenurship.

Irrigation, Pesticides and others:

Table-3.7(a): Per acre irrigation, insecticide & others cost of Potato by size of land planted

(Fig in Tk)

Size of land planted(acres)	Total	Variety of Potato		Tenure ship	
		Local	HYV	Own	Others
<=0.04	3341	2726	4491	3696	2475
0.05-0.49	3667	2633	4429	3765	3187
0.50-0.99	4860	2381	5200	4855	3667
1.00-1.49	4673	3059	4729	4830	3786
1.50-2.49	4718	2886	4870	4630	4152
2.50-4.99	4594	-	4594	4796	4248
5.00-7.49	4687	-	4687	5074	4377
7.50+	4694	-	4694	4694	
Average	4394	2638	4618	4450	3850

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

The table reveals that per acre total cost of irrigation, pesticides and others is Tk 4394. It is TK 2638 for local and Tk 4618 for HYV. The cost is less for small land size and high for large land sizes which are clearly noticed in the table. By tenure ship, the cost is higher (Tk 4450) for own land compared to others (Tk 3850).

Table-3.7(b): Per acre Irrigation, Insecticide & others cost by size of land planted of potato, 2008-09

(Fig in Tk)

Size of land planted (Local)	Irrigation	Insecticide	Others	Total
<=0.04	1016	1285	425	2726
0.05-0.49	1057	1287	289	2633
0.50-0.99	1056	1157	168	2381
1.00-1.49	1309	1461	289	3059
1.50-2.49	1223	1300	263	2886
2.50-4.99				
5.00-7.49				
7.50+				
Average	1073	1289	276	2638

Table-3.7(c): Per acre Irrigation, Insecticide & others cost by size of land planted of potato,2008-09

(Fig in Tk)

Size of land planted (HYV)	Irrigation	Insecticide	Others	Total
<=0.04	1031	2980	480	4491
0.05-0.49	1017	2775	637	4429
0.50-0.99	1182	3415	603	5200
1.00-1.49	1179	3059	511	4729
1.50-2.49	1277	3013	580	4870
2.50-4.99	1430	2679	485	4594
5.00-7.49	1447	2931	309	4687
7.50+	1225	3102	367	4694
Average	1191	2859	568	4618

Fertilizer:

Table-3.8: Per acre fertilizer cost of potato by size of land planted,

(Fig in Tk)

Size of land planted(acres)	Total	Variety of Potato		Tenure ship	
		Local	HYV	Own	Others
<=0.04	8814	7592	11533	8942	7813
0.05-0.49	9380	6218	11331	9245	10052
0.50-0.99	11623	5648	12431	10905	14749
1.00-1.49	11543	7196	11745	11404	12343
1.50-2.49	13718	7345	14204	12686	17104
2.50-4.99	13825	-	13825	12516	16056
5.00-7.49	14725	-	14725	14645	13765
7.50+	14880	-	14880	14880	-
Average	11385	6273	12577	10855	13591

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

Fertilizer is an important input for potato cultivation which is applied from planting to growing stage of the crop. Farmers have to spend a substantial amount of money for the application of this imput. For one acre potato cultivation Tk 11385 is spent for fertilizer which is noticed in the table depicted above. Per acre fertilizer cost of local variety is Tk 6273 and for HYV Tk 12577. Potato cultivation of low land size shows less cost for the application of this input. It is noticed in the table that per acre fertilizer cost of potato for 'own' type of lands is Tk 10855 and it is Tk 13591 for 'others' type of lands. Per acre fertilizers cost of the crop under 'others' type of lands is higher than that of 'own' type of lands.

Harvesting:

Table-3.9: Per acre harvesting cost of potato by size of land planted,

(Fig in Tk)

Size of land planted(acres)	Total	Variety of Potato		Tenure ship	
		Local	HYV	Own	Others
<=0.04	2685	2742	2579	2697	2598
0.05-0.49	2504	2495	2509	2465	2700
0.50-0.99	2427	2325	2441	2370	2675
1.00-1.49	2403	2760	2376	2206	2873
1.50-2.49	2500	2419	2561	2356	3210
2.50-4.99	2706		2706	2478	3093
5.00-7.49	2773		2773	2523	3307
7.50+	2864		2864	2864	
Average	2486	2485	2487	2409	2798

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

It is observed from the table that per acre harvesting cost of potato is Tk 2486. Per acre harvesting costs of local variety (Tk 2485) and HYV (Tk 2487) are almost same. By tenure ship point of view, it is Tk 2409 for those who cultivated the crop in their own lands and it is Tk 2798 for 'others' type of lands .

Production cost:

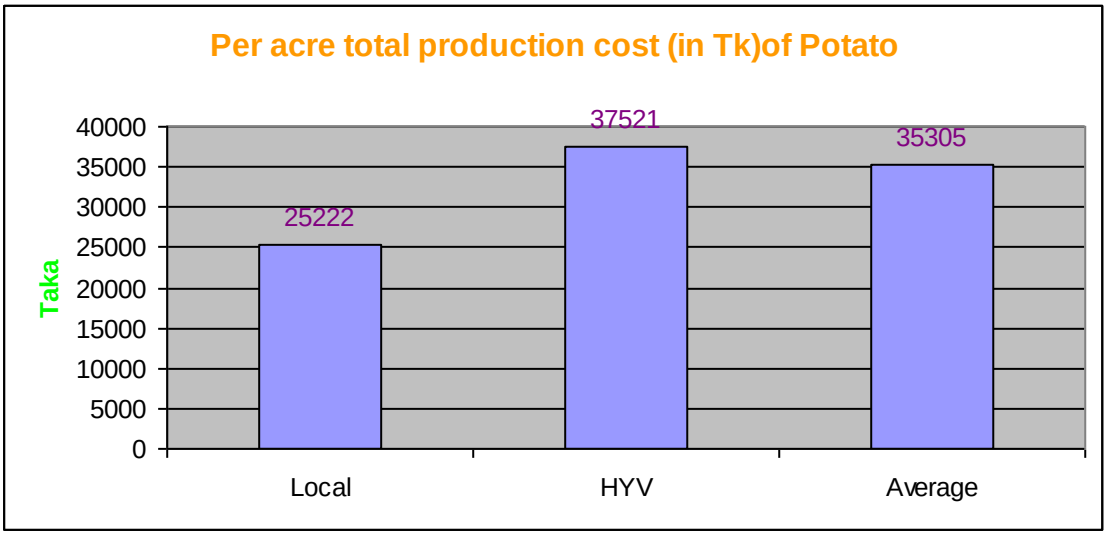
Table-3.10: Per acre total production cost of potato by size of land planted,

(Fig in Tk)

Size of land planted(acres)	Total	Variety of Potato		Tenure ship	
		Local	HYV	Own	Others
<=0.04	30965	27551	36665	31628	27396
0.05-0.49	32321	25086	35770	31862	32367
0.50-0.99	37144	23713	38222	36291	38989
1.00-1.49	36412	28129	36420	36414	35779
1.50-2.49	39141	27315	40146	38431	43571
2.50-4.99	39262	-	39262	37416	42483
5.00-7.49	39434	-	39434	39340	39618
7.50+	39639	-	39639	39639	-
Average	35305	25222	37521	34546	38024

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

The table discloses that per acre production cost of potato cultivation stands at Tk 35305(local Tk 25222 and HYV Tk 37521).Generally farmers apply more inputs in producing the crop and it resulted in high investment. Total production cost is inclusive of all components excepting land leasing value. Per acre production cost of potato is much lower for owned land (Tk 34546) than that of others type of lands (Tk 38024). Per acre total production cost (in Tk) of Potato by variety is illustrated in the bar-diagram below:



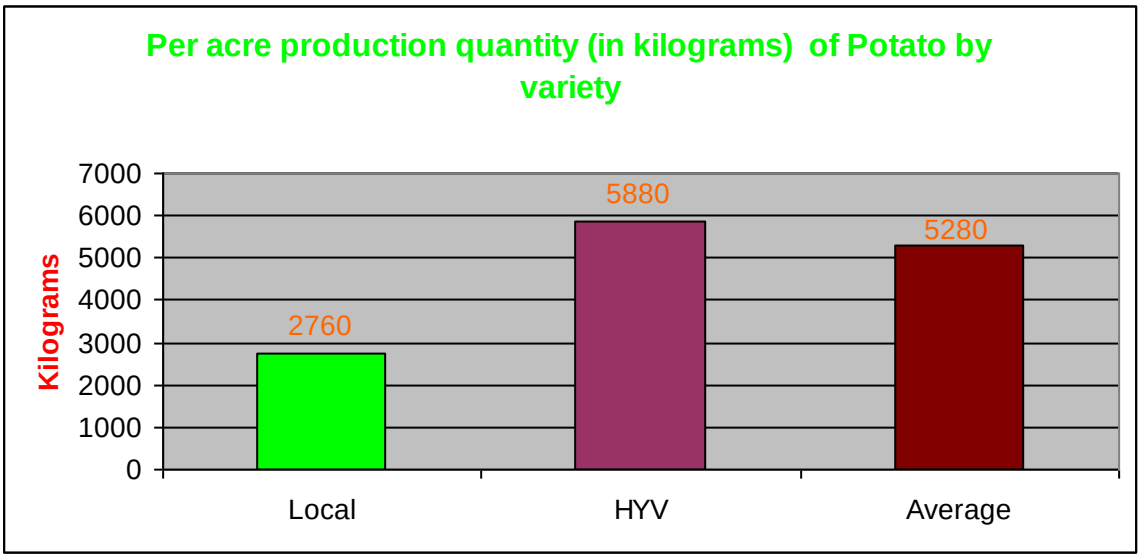
Production quantity:

Table-3.11: Per acre production quantity (Kilograms) by size of land planted and by variety.

Size of land planted(acres)	Combined (Kilograms)	Variety		Tenure ship	
		Local (Kilograms)	HYV (Kilograms)	Own (Kilograms)	Others (Kilograms)
<=0.04	4280	3720	5280	4320	4000
0.05-0.49	4320	2600	5400	4280	4560
0.50-0.99	5480	2680	5880	5360	6080
1.00-1.49	5440	3760	5520	5400	5600
1.50-2.49	6000	3560	6200	5600	7200
2.50-4.99	6760	-	6760	6000	8080
5.00-7.49	7040	-	7040	6760	7360
7.50+	5800	-	5800	5800	-
Average	5280	2760	5880	5040	6160

Per acre production of combined potato is recorded 5280 kilograms (local 2760 kilograms and HYV 5880 kilograms). Per acre production rate ranged from 4280 kilograms to 7040 kilograms. Maximum yield rate is found in the class interval of 5.00-7.49 acres and minimum in the class interval of 0.04 acres. Per acre yield rate of HYV is almost double than that of local variety. If we look at tenurship, own type of land occupies the yield rate of 5040 kilograms, where as others type of lands hold

6160 kilograms. Per acre production quantity (in kilograms) of Potato by variety is demonstrated in the bar diagram below.



Production value:

Table-3.12: Per acre production value of potato by size of land planted,

(Fig in Tk)

Size of land planted(acres)	Total	Variety of Potato		Tenure ship	
		Local	HYV	Own	Others
<=0.04	44730	40477	52775	45125	41743
0.05-0.49	44682	29354	54054	43705	49615
0.50-0.99	56730	29610	60348	54612	66122
1.00-1.49	55031	42709	55611	54381	58419
1.50-2.49	64469	35680	66769	58621	83744
2.50-4.99	74762		74762	62878	95030
5.00-7.49	76685		76685	64967	88478
7.50+	59667		59667	59667	
Average	55383	30554	61156	51965	69005

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

Per acre production value of combined potato is found to be Tk 55383 (local Tk 30554 and HYV Tk 61156). Per acre production value of HYV is double (Tk 61156) than that of local variety (Tk 30554). Considering the of land tenure ship own type of land registers Tk 51965 and it is Tk 69005 for others type of lands.

Table-3.13: Per Kg production cost and production value of Potato by variety.

Vrity	Per kg Production Cost(in Tk)	Per Kg Production Value (in Tk)
Local	9.14	11.07
HYV	6.38	10.40
Total/ Average	6.69	10.49

Table-3.14: Per acre number of labourers engaged in seed related work by size of land planted.

Size of land planted (acres)	Combined	Variety of potato		Tenure ship	
		Local	HYV	Own	Others
<=0.04	20	20	20	20	20
0.05-0.49	19	19	20	19	19
0.50-0.99	18	17	19	18	19
1.00-1.49	16	16	16	16	16
1.50-2.49	16	16	16	16	16
2.50-4.99	17		17	17	17
5.00-7.49	18		18	18	18
7.50+	18		18	19	
Average	17	18	17	17	18

Number of labourers deployed for seed related work in plantation of potato (Combined) per acre is observed to be 17. For local variety and HYV separately the numbers are 18 and 17 respectively. By tenureship, per acre number of labourers for own type of lands is 17 and for others, it is 18. The table clearly shows that plantation of the crop in lower size land needs more labourers.

Table-3.15: Per acre number of labourers engaged in canal related work by size of land planted

.Size of land planted (acres)	Combined	Variety of potato		Tenure ship	
		Local	HYV	Own	Others
<=0.04	15	16	15	15	15
0.05-0.49	14	15	14	14	14
0.50-0.99	11	10	11	11	11
1.00-1.49	10	10	10	10	10
1.50-2.49	10	12	10	10	10
2.50-4.99	10		10	11	12
5.00-7.49	10		11	10	11
7.50+	11		10	11	
Average	12	15	11	12	12

It is seen from the table that per acre number of labourers for canal related work of the potato crop is 12. For local variety, the number is 15 and for HYV it is 11. By tenureship ‘own’ and ‘others’ type of lands both need 12 labourers each.

Table-3.16: Per acre number of labourers engaged in harvesting related work by size of land planted.

.Size of land planted (acres)	Combined	Variety of potato		Tenure ship	
		Local	HYV	Own	Others
<=0.04	23	23	23	24	23
0.05-0.49	22	22	22	22	25
0.50-0.99	19	20	18	19	19
1.00-1.49	18	19	18	18	17
1.50-2.49	17	17	18	17	17
2.50-4.99	18		18	16	17
5.00-7.49	21		21	19	19
7.50+	19		19	19	
Average	19	22	19	19	21

Farmers engaged 19 labourers per acre for harvesting work of potato. The figures are 22 and 19 for local and HYV respectively. Farmers who cultivated potato in their own lands used 19 labourers and for other type of lands 21 labourers are deployed.

Productivity:

Table-3.17(a): Per acre productivity of potato by variety

Variety	Production cost (in Tk)	Production value (in Tk)	Productivity
Local	25222	30554	1.21
HYV	37521	61156	1.63
Total/Average	35305	55383	1.57

Figures in the table expose that cultivation of potato is profitable. Productivity of HYV potato (1.63) is substantially higher than the local variety and definitely farmers will continue production of the crop.

Table-3.17(b): Per acre productivity of potato by land tenure ship

Tenure ship	Production cost (in Tk)	Production value (in Tk)	Productivity
Own land	34546	51965	1.50
Other's land	38024	69005	1.81
Combined average	35305	55383	1.57

By tenure ship consideration, productivity of potato in 'others' type of land is 1.81 and it is 1.50 for 'own' type of land. For all types cultivation of potato is profitable.

Table-3.18: Number of plots in tenureship by size of land planted of potato,

Size of land planted (acres)	Land tenure ship					Total
	Own	Share	Mortgage	Lease	Others	
<=0.04	262	15	5	9	1	292
0.05-0.49	1603	119	75	120	22	1939
0.50-0.99	239	11	5	34	3	292
1.00-1.49	86	1	3	11	0	101
1.50-2.49	57	1	2	15	0	75
2.50-4.99	16	1	1	6	0	24
5.00-7.49	2	0	0	2	0	4
7.50+	1	0	0	0	0	1
Average	2266	148	91	197	26	2728

Some households reported about the cultivation of local variety , some reported about the cultivation of HYV whereas some households responded about the cultivation of both the varieties. Total number of plots irrespective of the variety and size of land planted are recorded 2728. Maximum numbers of plots (1939) are registered in the class interval of 0.5-0.49 acres. By land tenurship under ‘own’ types of lands number of plots are recorded as 2266 which is about 83 % of the total plots. It exposes that lion’s share of the total plots are cultivated by the farmers in their own lands.

Table-3.19: Area (acres) covered in sample by type of land tenureship and by size of land planted

(Fig in acres)

Size of land planted (acres)	Land tenure ship					Total
	Own	Share	Mortgage	Lease	Others	
<=0.04	7.53	0.48	0.16	0.30	0.02	8.49
0.05-0.49	274.40	17.51	10.03	22.23	4.78	328.95
0.50-0.99	154.50	6.00	2.65	24.38	2.20	189.73
1.00-1.49	98.46	1.25	3.53	12.80		116.04
1.50-2.49	104.07	2.00	3.80	25.32		135.19
2.50-4.99	49.93	3.50	3.5	20.81		77.74
5.00-7.49	10.70			10.25		20.95
7.50+	15.00					15.00
Average	714.59	30.74	23.67	116.09	7.00	892.09

It is seen from the table that out of total land planted (892.09 acres) under potato , 714.59 acres are found under own type of land which represents 80.10 % of the total. Under own type of land, potato plantation, is made in 8 sizes of land and the largest 274.40 acres of land are registered in the land size 0.05-0.49 acres.

Table 3.20: Number of plots by division and by size of land planted.

Size of land planted (acres)	Division						Total
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Sylhet	
<=0.04	24	69	67	40	48	44	292
0.05-0.49	43	317	350	184	1003	42	1939
0.50-0.99		22	40	5	225		292
1.00-1.49		3	12		86		101
1.50-2.49			20		55		75
2.50-4.99			10		14		24
5.00-7.49			2		2		4
7.50+			1				1
Average	67	411	502	229	1433	86	2728

Total number of plots under potato cultivation has been recorded 2728 irrespective of size of land planted. In Rajshahi division it is found 1433. Only one plot in the size of land 7.50+ acres is seen in Dhaka division and 2 plots in the size of land 5.00-7.49 acres are noticed in the table in Dhaka and Rajshahi divisions. The table depicts that maximum number of plots in the size of land 0.05-0.49 acres are under potato cultivation in five divisions.

Table-3.21: Area (acres) under potato as recorded in the sample area by division and by size of land planted

Size of land planted (acres)	Division						Total
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Sylhet	
<=0.04	0.57	1.98	1.94	1.08	1.54	1.38	8.49
0.05-0.49	6.05	49.47	50.34	22.83	194.35	5.91	328.95
0.50-0.99	-	14.53	27.80	2.95	144.45	-	189.73
1.00-1.49	-	3.40	14.80	-	97.84	-	116.04
1.50-2.49	-	-	34.91	-	100.28	-	135.19
2.50-4.99	-	-	33.51	-	44.23	-	77.74
5.00-7.49	-	-	10.95	-	10.00	-	20.95
7.50+	-	-	15.00	-	-	-	15.00
Average	6.62	69.38	189.25	26.86	592.69	7.29	892.09

Above table discloses that under potato cultivation Rajshahi division holds the highest 592.69 acres (66.44%) out of total land planted (892.09 acres). Dhaka division shows the second highest position (21.21%) with 189.25 acres of cultivation under the crops. Potato cultivation in all sizes of land are found only in places of Dhaka division. 328.95 acres of land under the crop are recorded in the class interval of 0.05-0.49 acres which is shared by all the divisions.

Major head wise per acre production cost of Potato.

Per acre production costs of local variety and HYV Potato by major heads are displayed in the tables 3.22 and 3.23. 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 Potato, it has not been possible to show per acre leasing value.

Table-3.22: Per acre major group wise production cost of local variety potato by size of land planted.

(Fig in Tk)

Size of land planted (Local)	Major group wise production cost						
	Land preparation	Seed & seed related	Canal & canal related	Insecticide, irrigation & others	Fertilizer	Harvesting & others	Total
<=0.04	3119	9548	2063	2726	7353	2742	27551
0.05-0.49	3132	8821	1787	2633	6218	2495	25086
0.50-0.99	3180	8425	1754	2381	5648	2325	23713
1.00-1.49	3453	9943	1718	3059	7196	2760	28129
1.50-2.49	3518	9310	1837	2886	7345	2419	27315
2.50-4.99							
5.00-7.49							
7.50+							
Average	3177	8856	1793	2638	6273	2485	25222
Percentage(%)	12.60	35.11	7.11	10.46	24.87	9.85	100

The table shows that per acre production cost of seed and seed related work is found to be maximum (about 35%) followed by fertilizer cost (about 25%) major grop wise per acre production cost is demonstrated in the pi-chart below.

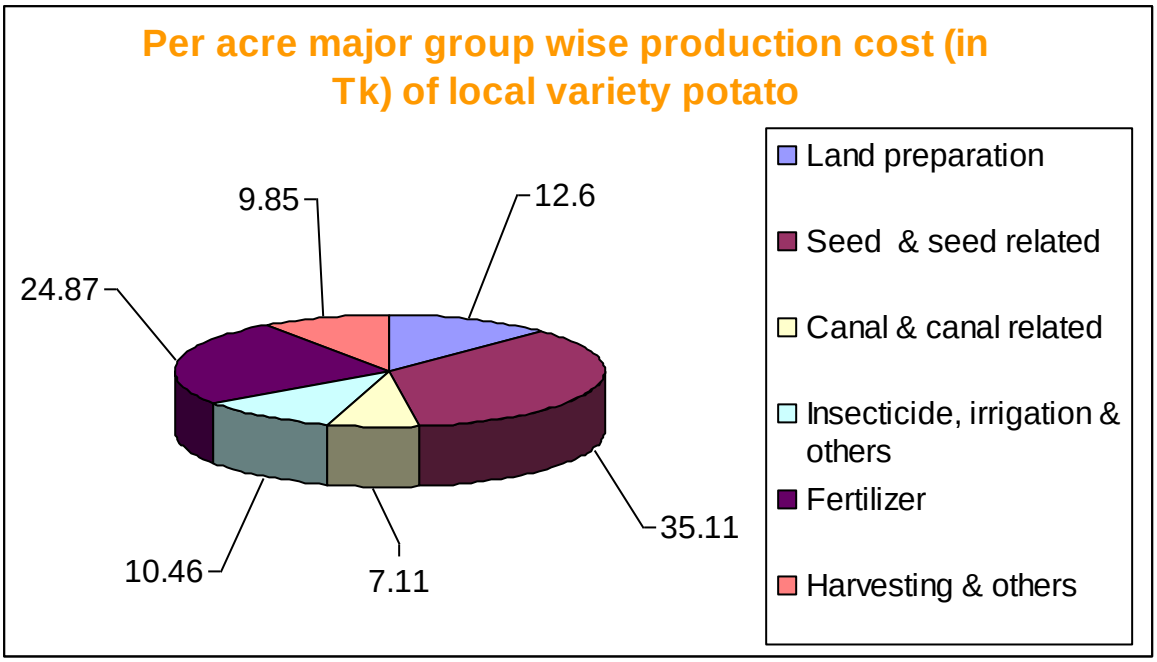
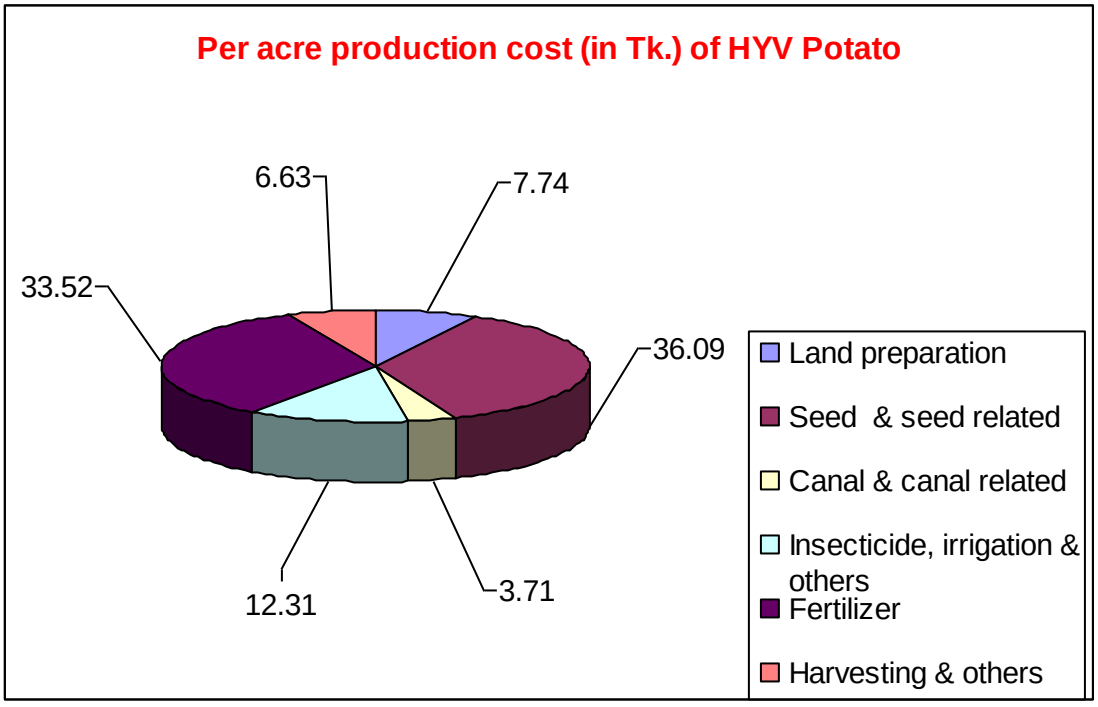


Table-3.23: Per acre major group wise production cost of HYV potato by size of land planted.

(Fig in Tk)

Size of land planted (HYV)	Major group wise production cost						
	Land preparation	Seed & seed related	Canal & canal related	Insecticide, irrigation & others	Fertilizer	Harvesting & others	Total
<=0.04	3296	13009	1757	4491	11533	2579	36665
0.05-0.49	3194	12667	1640	4429	11331	2509	35770
0.50-0.99	2808	14050	1292	5200	12431	2441	38222
1.00-1.49	2694	13125	1337	4729	11745	2376	36006
1.50-2.49	2727	14528	1256	4870	14204	2561	40146
2.50-4.99	2981	13823	1333	4594	13825	2706	39262
5.00-7.49	2781	13189	1279	4687	14725	2773	39434
7.50+	2700	14368	1133	4694	14880	2864	39639
Average	2904	13542	1393	4618	12577	2487	37521
Percentage(%)	7.74	36.09	3.71	12.31	33.52	6.63	100

The table exposes that about 36% of the per acre total production is spent for seed and seed sowing work. Per acre expenditure for fertilizer is about 34%. Major group wise per acre production cost is displayed in the pi-chart below:



3.24 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 / fertilizer/all others)

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

K = the number of random group

Table-3.24(a): Estimated average production cost (excluding leasing) per kg for the 2008-09 variety wise potato crops and their standard errors.

Variety of potato	Total		Land preparation		Fertilizer		All others	
	Cost	S.E	Cost	S.E	Cost	S.E	Cost	S.E
Local	9.13	0.09428	1.15	0.02644	2.27	0.07681	5.71	0.02946
HYV	6.38	0.01265	0.49	0.00410	2.14	0.02581	3.75	0.01237
Combined	6.69	0.05888	0.56	0.00687	2.16	0.04871	3.97	0.00957

From the above table-1 the average production cost per kg for local potato of 9.13 taka is significantly different from the 6.38 taka average production cost for HYV potato at 95% confidence level. Although the estimated production cost per kg for local potato is subject to higher standard errors than for HYV potato crops. Production cost for all estimates have acceptable reliability in terms of sampling error.

Table-3.24(b): Estimated average production cost (excluding leasing) per acre for the 2008- 09 variety wise potato crops and their standard errors

Variety of potato	Total		Land preparation		Fertilizer		All others	
	Cost	S.E	Cost	S.E	Cost	S.E	Cost	S.E
Local	25222	1.80259	3177	0.63033	6273	1.28452	15772	0.86057
HYV	37521	0.93679	2904	0.16346	12577	0.61410	22040	0.80247
Combined	35305	0.87807	2956	0.24210	11385	0.70308	20964	0.62935

The above table shows that the average production cost per acre for local potato of 25222 taka is significantly different from the 37521 taka average production cost for HYV potato crops at 95% confidence level. The average production cost per acre of local potato is about 67% higher than HYV potato. The standard error of local potato per acre is 1.80259 due to low representation in the sample. This data can be used cautiously.

However the estimated production cost per acre for local & HYV potato production cost were subject to higher standard errors than for HYV potato 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 by size of land planted of potato,2008-09

(Fig in Tk)

Size of land planted (Combined)	Plough	Power tiller	Others	Total
<=0.04	849	1709	622	3180
0.05-0.49	829	1888	454	3171
0.50-0.99	577	1984	292	2852
1.00-1.49	617	1875	245	2737
1.50-2.49	345	2200	239	2784
2.50-4.99	106	2686	210	3001
5.00-7.49	99	2482	200	2781
7.50+		2500	200	2700
Average	581	2045	330	2956

Table-4.1b: Per acre land preparation cost by size of land planted of potato,2008-09

(Fig in Tk)

Size of land planted (Local)	Plough	Power tiller	Others	Total
<=0.04	955	1542	622	3119
0.05-0.49	1110	1641	381	3132
0.50-0.99	943	2013	224	3180
1.00-1.49	1493	1656	304	3453
1.50-2.49	880	2170	468	3518
2.50-4.99				
5.00-7.49				
7.50+				
Average	1081	1690	371	3177

Table-4.1c: Per acre land preparation cost by size of land planted of potato,2008-09

(Fig in Tk)

Size of land planted (HYV)	Plough	Power tiller	Others	Total
<=0.04	651	2020	622	3292
0.05-0.49	656	2040	499	3194
0.50-0.99	528	1980	301	2808
1.00-1.49	575	1876	242	2694
1.50-2.49	303	2202	221	2727
2.50-4.99	106	2666	210	2981
5.00-7.49	99	2482	200	2781
7.50+		2500	200	2700
Average	464	2120	320	2904

Table-4.1d: Per acre land preparation cost by size of land planted of potato,2008-09

(Fig in Tk)

Size of land planted (Own)	Plough	Power tiller	Others	Total
<=0.04	843	1690	635	3167
0.05-0.49	834	1849	450	3133
0.50-0.99	628	1932	294	2855
1.00-1.49	687	1889	258	2855
1.50-2.49	419	2067	244	2834
2.50-4.99	164	2347	240	2751
5.00-7.49		2587	196	2783
7.50+		2500	200	2700
Average	632	1934	338	2932

Table-4.1e: Per acre land preparation cost by size of land planted of potato,2008-09

(Fig in Tk)

Size of land planted (Others)	Plough	Power tiller	Others	Total
<=0.04	896	1956	522	3374
0.05-0.49	805	2083	474	3362
0.50-0.99	354	2209	279	2842
1.00-1.49	600	1797	376	2773
1.50-2.49	225	2645	225	2966
2.50-4.99	97	3294	155	3449
5.00-7.49		2312	205	2719
7.50+				
Average	474	2380	297	3151

Table-4.2a: Per acre seed and seed sowing cost under combined potato by Size of land planted

Size of land planted (combined)	Seed		Seed sowing				Total cost (Tk)
	Quantity (kg)	Cost(Tk)	Number of Labour			Cost(Tk)	
			Family	Hired	Total		
<=0.04	449	7997	16	4	20	2543	10989
0.05-0.49	542	8870	10	9	19	2208	11620
0.50-0.99	690	11390	7	11	18	1955	14035
1.00-1.49	737	11178	4	12	16	1787	13702
1.50-2.49	713	12126	2	14	16	1997	14123
2.50-4.99	733	11655	2	15	17	2168	13823
5.00-7.49	759	10404	2	16	18	2026	13189
7.50+	608	10867	3	15	18	2893	13368
Average	648	10504	6	11	17	2091	12595

Table-4.2b: Per acre seed and seed sowing cost under Local potato by Size of land planted .

Size of land planted (local)	Seed		Seed sowing				Total Cost(Tk)
	Quantity (kg)	Cost (Tk)	Number of Labour			Cost (Tk)	
			Family	Hired	Total		
<=0.04	330	6504	15	5	20	2714	9548
0.05-0.49	322	6293	12	7	19	2206	8821
0.50-0.99	308	5908	9	8	17	2209	8425
1.00-1.49	391	7095	5	11	16	2457	9943
1.50-2.49	353	6785	3	13	16	2172	9310
2.50-4.99							
5.00-7.49							
7.50+							
Average	324	6303	11	7	18	2229	8856

Table-4.2c: Per acre seed and seed sowing cost under HYV potato by Size of land planted

Size of land planted (HYV)	Seed		Seed sowing				Total Cost (Tk)
	Quantity (kg)	Cost (Tk)	Number of Labour			Cost (Tk)	
			Family	Hired	Total		
<=0.04	672	10785	16	4	20	2224	13009
0.05-0.49	678	10458	10	10	20	2209	12667
0.50-0.99	742	12130	6	13	19	1920	14050
1.00-1.49	754	11370	3	13	16	1755	13125
1.50-2.49	741	12545	4	12	16	1983	14528
2.50-4.99	733	11655	2	15	17	2168	13823
5.00-7.49	759	10404	2	16	18	2026	13189
7.50+	608	10867	3	15	18	2893	14368
Average	722	11483	5	12	17	2059	13542

Table-4.2d: Per acre seed and seed sowing cost under land tenure ship (Own) by Size.

Size of land planted (Own)	Seed		Seed sowing				Total Cost (Tk)
	Quantity (kg)	Cost (Tk)	Number of Labour			Cost(Tk)	
			Family	Hired	Total		
<=0.04	460	8180	16	4	20	2535	11175
0.05-0.49	544	8864	10	9	19	2178	11586
0.50-0.99	699	11360	6	12	18	1905	13964
1.00-1.49	745	11243	4	12	16	1789	13777
1.50-2.49	715	12042	4	14	16	1856	14613
2.50-4.99	746	11545	2	15	17	1947	13492
5.00-7.49	797	9776	2	16	18	2602	13175
7.50+	608	10867	1	17	18	2893	14368
Average	648	10430	6	11	17	2027	12457

Table-4.2e: Per acre seed and seed sowing cost under land tenure ship (Others) by Size

Size of land planted (others)	Seed		Seed sowing				Total Cost (Tk)
	Quantity (kg)	Cost (Tk)	Number of Labour			Cost (Tk)	
			Family	Hired	Total		
<=0.04	365	6557	16	4	20	2692	9249
0.05-0.49	536	8896	10	9	19	2332	11228
0.50-0.99	655	11518	8	11	19	2171	13689
1.00-1.49	693	10809	4	11	16	1773	12582
1.50-2.49	703	12412	4	12	16	2474	14886
2.50-4.99	710	11844	2	15	17	2544	14388
5.00-7.49	720	11060	2	16	18	2966	14026
7.50+							
Average	642	10800	9	9	18	2349	13149

Table-4.3a: Per acre Canal related cost and number of labour engaged by size of land planted.

Size of land planted(Combined)	Number of labour			Total cost (Tk)
	Family	Hired	Total	
<=0.04	9	6	15	1956
0.05-0.49	8	6	14	1696
0.50-0.99	4	7	11	1347
1.00-1.49	3	7	10	1354
1.50-2.49	2	8	10	1298
2.50-4.99	2	8	10	1333
5.00-7.49	2	8	10	1279
7.50+	3	8	11	1133
Average	4	8	12	1489

Table-4.3b: Per acre Canal related cost and number of labour engaged by size of land planted

Size of land planted (Local)	Number of labour			Total cost (Tk)
	Family	Hired	Total	
<=0.04	9	7	16	2063
0.05-0.49	10	5	15	1787
0.50-0.99	4	6	10	1754
1.00-1.49	3	7	10	1718
1.50-2.49	1	11	12	1837
2.50-4.99				
5.00-7.49				
7.50+				
Average	9	6	15	1793

Table-4.3c: Per acre Canal related cost and number of labour engaged by size of land planted

Size of land planted (HYV)	Number of labour			Total cost (Tk
	Family	Hired	Total	
<=0.04	9	6	15	1757
0.05-0.49	8	6	14	1640
0.50-0.99	4	7	11	1292
1.00-1.49	3	7	10	1337
1.50-2.49	2	8	10	1256
2.50-4.99	3	7	10	1333
5.00-7.49	2	8	10	1279
7.50+	2	8	10	1133
Average	4	7	11	1393

Table-4.3d: Per acre Canal related cost and number of labour engaged by size of land planted.

Size of land planted (Own)	Number of labour			Total cost (Tk
	Family	Hired	Total	
<=0.04	8	7	15	1951
0.05-0.49	8	6	14	1668
0.50-0.99	4	7	11	1342
1.00-1.49	3	7	10	1342
1.50-2.49	2	8	10	1312
2.50-4.99	2	8	10	1383
5.00-7.49	2	8	10	1140
7.50+	3	8	11	1133
Average	3	9	12	1465

Table-4.3e: Per acre Canal related cost and number of labour engaged by size of land planted

Size of land planted (Others)	Number of labour engaged			Total cost (Tk
	Family	Hired	Total	
<=0.04	9	6	15	1987
0.05-0.49	7	7	14	1838
0.50-0.99	5	6	11	1367
1.00-1.49	4	6	10	1422
1.50-2.49	2	8	10	1253
2.50-4.99	2	9	11	1249
5.00-7.49	2	9	11	1424
7.50+				
Average	4	8	12	1485

Table-4.4a: Per acre Irrigation, Insecticide & others cost by size.

(Fig in Tk)

Size of land planted (Combined)	Irrigation	Insecticide	Others	Total
<=0.04	1021	1876	444	3341
0.05-0.49	1032	2131	504	3667
0.50-0.99	1167	3142	551	4860
1.00-1.49	1185	2987	501	4673
1.50-2.49	1273	2888	557	4718
2.50-4.99	1430	2679	485	4594
5.00-7.49	1447	2931	309	4687
7.50+	1225	3102	367	4694
Average	1169	2712	513	4394

Table-4.4b: Per acre Irrigation, Insecticide & others cost by size of land planted.

(Fig in Tk)

Size of land planted (Local)	Irrigation	Insecticide	Others	Total
<=0.04	1016	1285	425	2726
0.05-0.49	1057	1287	289	2633
0.50-0.99	1056	1157	168	2381
1.00-1.49	1309	1461	289	3059
1.50-2.49	1223	1300	263	2886
2.50-4.99				
5.00-7.49				
7.50+				
Average	1073	1289	276	2638

Table-4.4c: Per acre Irrigation, Insecticide & others cost by size of land planted

(Fig in Tk)

Size of land planted (HYV)	Irrigation	Insecticide	Others	Total
<=0.04	1031	2980	480	4491
0.05-0.49	1017	2775	637	4429
0.50-0.99	1182	3415	603	5200
1.00-1.49	1179	3059	511	4729
1.50-2.49	1277	3013	580	4870
2.50-4.99	1430	2679	485	4594
5.00-7.49	1447	2931	309	4687
7.50+	1225	3102	367	4694
Average	1191	2859	568	4618

Table-4.4d: Per acre Irrigation, Insecticide & others cost by size of land planted

(Fig in Tk)

Size of land planted (Own)	Irrigation	Insecticide	Others	Total
<=0.04	1008	2225	463	3696
0.05-0.49	996	2255	514	3765
0.50-0.99	1110	3158	587	4855
1.00-1.49	1197	3105	528	4830
1.50-2.49	1148	2865	617	4630
2.50-4.99	1266	2927	603	4796
5.00-7.49	1420	3174	280	5074
7.50+	1225	3102	367	4694
Average	1105	2802	543	4450

Table-4.4e: Per acre Irrigation, Insecticide & others cost by size of land plan.

(Fig in Tk)

Size of land planted (Others)	Irrigation	Insecticide	Others	Total
<=0.04	1122	1056	297	2475
0.05-0.49	1216	1504	467	3187
0.50-0.99	1413	1857	397	3667
1.00-1.49	1119	2316	351	3786
1.50-2.49	1698	2100	354	4152
2.50-4.99	1708	2255	285	4248
5.00-7.49	1571	2465	338	4377
7.50+				
Average	1427	2041	382	3850

Table-4.5a: Per acre Quantity (Kg) of fertilizer used and value (Tk) by size of land planted.

Size of land planted (Combined)	Urea		TSP		Organic		Cake Tk	Others (Tk)	Total (Tk)
	Qty.	Tk	Qty.	Tk	Qty.	Tk			
<=0.04	106	1443	66	4218	1975	1960	81	1112	8814
0.05-0.49	114	1481	82	4851	2106	1132	97	2102	9663
0.50-0.99	131	1627	122	6431	2432	1202	63	2301	11623
1.00-1.49	122	1507	110	6200	2903	1386	42	2408	11543
1.50-2.49	141	1870	141	8251	1852	1044		2553	13718
2.50-4.99	178	2142	137	8312	1394	754	66	2550	13825
5.00-7.49	189	4611	164	7687	1050	406		2021	14725
7.50+	153	1840	160	11040				2000	14880
Average	130	1709	111	6335	2137	1107	61	2173	11385

Table-4.5b: Per acre Quantity (Kg) of fertilizer used & value (Tk) by size of land planted.

Size of land planted (Local)	Urea		TSP		Organic		Cake Tk	Others (Tk)	Total (Tk)
	Qty.	Tk	Qty.	Tk	Qty.	Tk			
<=0.04	87	1244	49	3208	1723	1880	77	944	7353
0.05-0.49	79	1073	45	2754	2192	1096	138	1157	6218
0.50-0.99	82	1058	39	2415	2086	965	99	1111	5648
1.00-1.49	93	1186	60	3309	1947	743		1958	7196
1.50-2.49	100	1353	70	4101	1082	347		1544	7345
2.50-4.99									
5.00-7.49									
7.50+									
Average	81	1096	46	2817	2092	1051	119	1191	6273

Table-4.5c: Per acre Quantity (Kg) of fertilizer used and value (Tk)by size of land planted.

Size of land planted (HYV)	Urea		TSP		Organic		Cake Tk	Others (Tk)	Total (Tk)
	Qty.	Tk	Qty.	Tk	Qty.	Tk			
<=0.04	141	1815	100	6098	2446	2107	89	1424	11533
0.05-0.49	135	1732	105	6143	2054	1154	71	2229	11331
0.50-0.99	137	1704	134	6973	2479	1234	58	2462	12431
1.00-1.49	124	1521	113	6335	2947	1416	44	2429	11745
1.50-2.49	144	1909	147	8567	2018	1097		2630	14204
2.50-4.99	178	2142	137	8312	1394	754	66	2550	13825
5.00-7.49	189	4611	164	7687	1050	406		2021	14725
7.50+	153	1840	160	11040				2000	14880
Average	142	1852	126	7155	2147	1121	48	2402	12577

Table-4.5d: Per acre Quantity (Kg) of fertilizer used & value (Tk) by size of land planted.

Size of land planted (Own)	Urea		TSP		Organic		Cake Tk	Others (Tk)	Total (Tk)
	Qty.	Tk	Qty.	Tk	Qty.	Tk			
<=0.04	104	1418	67	3894	2089	2038	91	1160	8942
0.05-0.49	110	1430	81	4717	2243	1200	101	1797	9245
0.50-0.99	120	1471	114	5921	2618	1262	70	2179	10905
1.00-1.49	118	1461	108	6060	3093	1459	49	2374	11404
1.50-2.49	118	1622	127	7489	2218	1173		2401	12686
2.50-4.99	133	1592	109	7675	2084	1085		2165	12516
5.00-7.49	201	6009	154	7105	374	93		1439	14645
7.50+	153	1840	160	11040				2000	14880
Average	118	1574	103	5924	2353	1206	62	2065	10835

Table-4.5e: Per acre quantity (Kg) of fertilizer used & value (Tk) by size of land planted.

Size of land planted (Others)	Urea		TSP		Organic		Cake Tk	Others (Tk)	Total (Tk)
	Qty.	Tk	Qty.	Tk	Qty.	Tk			
<=0.04	116	1641	65	4091	1083	1344	0	738	7813
0.05-0.49	131	1734	87	5519	1422	789	76	1935	10052
0.50-0.99	178	2304	160	8640	1627	943	31	2830	14749
1.00-1.49	145	1770	121	7006	1808	966	0	2602	12343
1.50-2.49	217	2683	188	10749	1078	621	0	3051	17104
2.50-4.99	257	3079	185	9399	216	191	180	3207	16056
5.00-7.49	176	2107	175	8297	1756	732		2629	13765
7.50+									
Average	179	2249	143	7963	1269	714	58	2607	13591

Table-4.6a: Per acre harvesting related cost of potato and number of labour engaged by size.

Size of land planted (Combined)	Number of labour			Total cost (Tk)
	Family	Hired	Total	
<=0.04	15	8	23	2685
0.05-0.49	11	11	22	2504
0.50-0.99	6	13	19	2427
1.00-1.49	4	14	18	2403
1.50-2.49	3	14	17	2500
2.50-4.99	2	16	18	2706
5.00-7.49	3	16	19	2773
7.50+	1	18	19	2864
Average	6	13	19	2486

Table-4.6b: Per acre Harvesting related cost of local variety potato and number of labour engaged by size.

Size of land planted (Local)	Number of labour			Total cost (Tk)
	Family	Hired	Total	
<=0.04	15	8	23	2742
0.05-0.49	14	8	22	2495
0.50-0.99	8	12	20	2325
1.00-1.49	7	12	19	2760
1.50-2.49	6	11	17	2419
2.50-4.99				
5.00-7.49				
7.50+				
Average	12	10	22	2485

Table-4.6c: Per acre harvesting related cost of HYV potato and number of labour engaged by size

Size of land planted (HYV)	Number of labour			Total cost (Tk)
	Family	Hired	Total	
<=0.04	14	9	23	2579
0.05-0.49	10	12	22	2509
0.50-0.99	6	13	18	2441
1.00-1.49	3	15	18	2376
1.50-2.49	3	15	18	2561
2.50-4.99	2	16	18	2706
5.00-7.49	3	16	19	2773
7.50+	1	18	19	2864
Average	5	14	19	2487

Table-4.6d: Per acre harvesting related cost of potato of own lands and number of labour engaged by size.

Size of land planted (Own)	Number of labour			Total cost (Tk)
	Family	Hired	Total	
<=0.04	14	10	24	2697
0.05-0.49	11	11	22	2465
0.50-0.99	5	14	19	2370
1.00-1.49	4	14	18	2206
1.50-2.49	2	15	17	2356
2.50-4.99	2	15	17	2478
5.00-7.49	2	17	19	2523
7.50+	1	18	19	2864
Average	5	14	19	2409

Table-4.6e: Per acre Harvesting related cost of potato of others land and number of labour engaged by size.

Size of land planted (Others)	Number of labour			Total cost (Tk)
	Family	Hired	Total	
<=0.04	16	7	23	2598
0.05-0.49	12	10	22	2700
0.50-0.99	8	11	19	2675
1.00-1.49	4	13	17	2873
1.50-2.49	3	14	17	3210
2.50-4.99	2	16	18	3093
5.00-7.49	2	17	19	3307
7.50+				
Average	7	14	21	2798

Table-4.7a: Per acre major group wise production cost of potato by size of land planted

(Fig in Tk)

Size of land planted (combined)	Major group wise production cost						
	Land preparation	Seed & seed related	Canal & canal related	Insecticide, irrigation & others	Fertilizer	Harvesting & others	Total
<=0.04	3180	10989	1956	3341	8814	2685	30965
0.05-0.49	3171	11220	1696	3667	9663	2504	32321
0.50-0.99	2852	13035	1347	4860	11623	2427	37144
1.00-1.49	2737	13702	1354	4673	11543	2403	36412
1.50-2.49	2784	14123	1298	4718	13718	2500	39141
2.50-4.99	3001	13823	1333	4594	13825	2706	39282
5.00-7.49	2781	13189	1279	4687	14725	2773	39434
7.50+	2700	13368	1133	4694	14880	2864	39639
Average	2956	12595	1489	4394	11385	2486	35305

Table-4.7b: Per acre major group wise production cost of local variety potato by size of land planted.

(Fig in Tk)

Size of land planted (Local)	Major group wise production cost						
	Land preparation	Seed & seed related	Canal & canal related	Insecticide, irrigation & others	Fertilizer	Harvesting & others	Total
<=0.04	3119	9548	2063	2726	7353	2742	27551
0.05-0.49	3132	8821	1787	2633	6218	2495	25086
0.50-0.99	3180	8425	1754	2381	5648	2325	23713
1.00-1.49	3453	9943	1718	3059	7196	2760	28129
1.50-2.49	3518	9310	1837	2886	7345	2419	27315
2.50-4.99							
5.00-7.49							
7.50+							
Average	3177	8856	1793	2638	6273	2485	25222

Table-4.7c: Per acre major group wise production cost of HYV potato by size of land planted.

(Fig in Tk)

Size of land planted (HYV)	Major group wise production cost						
	Land preparation	Seed & seed related	Canal & canal related	Insecticide, irrigation & others	Fertilizer	Harvesting & others	Total
<=0.04	3296	13009	1757	4491	11533	2579	36665
0.05-0.49	3194	12667	1640	4429	11331	2509	35770
0.50-0.99	2808	14050	1292	5200	12431	2441	38222
1.00-1.49	2694	13125	1337	4729	11745	2376	36006
1.50-2.49	2727	14528	1256	4870	14204	2561	40146
2.50-4.99	2981	13823	1333	4594	13825	2706	39262
5.00-7.49	2781	13189	1279	4687	14725	2773	39434
7.50+	2700	14368	1133	4694	14880	2864	39639
Average	2904	13542	1393	4618	12577	2487	37521

Table-4.7d: Per acre major group wise production cost of potato of own lands by size of land planted

(Fig in Tk)

Size of land planted (Own)	Major group wise production cost						
	Land preparation	Seed & seed related	Canal & canal related	Insecticide, irrigation & others	Fertilizer	Harvesting & others	Total
<=0.04	3167	11175	1951	3696	8942	2697	31628
0.05-0.49	3133	11586	1668	3765	9245	2465	31862
0.50-0.99	2855	13964	1342	4855	10905	2370	36291
1.00-1.49	2855	13777	1342	4830	11404	2206	36414
1.50-2.49	2834	14613	1312	4630	12686	2356	38431
2.50-4.99	2751	13492	1383	4796	12516	2478	37416
5.00-7.49	2783	13175	1140	5074	14645	2523	39340
7.50+	2700	13368	1133	4694	14880	2864	39639
Average	2932	12457	1465	4450	10835	2409	34546

Table-4.7e: Per acre major group wise production cost of potatos of others land by size of land planted

(Fig in Tk)

Size of land planted (Others)	Major group wise production cost						
	Land preparation	Seed & seed related	Canal & canal related	Insecticide, irrigation & others	Fertilizer	Harvesting & others	Total
<=0.04	3274	9249	1987	2475	7813	2598	27396
0.05-0.49	3362	11228	1838	3187	10052	2700	32367
0.50-0.99	2842	13689	1367	3667	14749	2675	38989
1.00-1.49	2773	12582	1422	3786	12343	2873	35779
1.50-2.49	2966	14886	1253	4152	17104	3210	43571
2.50-4.99	3449	14388	1249	4248	16056	3093	42483
5.00-7.49	2719	14026	1424	4377	13765	3307	39618
7.50+							
Average	3151	13149	1485	3850	13591	2798	38024

Table-4.8a: Per acre Production quantity & value of potato by size of and planted and by variety.

Size of land planted	Combined		Local		HYV	
	Production (Mound)	Value (Tk)	Production (Mound)	Value (Tk)	Production (Mound)	Value (Tk)
<=0.04	107	44730	93	40477	132	52775
0.05-0.49	108	44682	65	29354	135	54054
0.50-0.99	137	56730	67	29610	147	60348
1.00-1.49	136	55031	94	42709	138	55611
1.50-2.49	150	64469	89	35680	155	66769
2.50-4.99	169	74762			169	74762
5.00-7.49	176	76685			176	76685
7.50+	145	59667			145	59667
Average	132	55383	69	30554	147	61156

Table-4.8b: Per acre Production quantity & value of potato by size of and planted and by variety.

Size of land planted	Combined		Own		Others	
	Production (Mound)	Value (Tk)	Production (Mound)	Value (Tk)	Production (Mound)	Value (Tk)
<=0.04	107	44730	108	45125	100	41743
0.05-0.49	108	44682	107	43705	114	49615
0.50-0.99	137	56730	134	54612	152	66122
1.00-1.49	136	55031	135	54381	140	58419
1.50-2.49	150	64469	140	58621	180	83744
2.50-4.99	169	74762	150	62878	202	95030
5.00-7.49	176	76685	169	74967	184	88478
7.50+	145	59667	145	59667		
Average	132	55383	126	51965	154	69005

Table-4.9a: Number of households by type of land tenure ship and by size of land planted.

Size of land planted(Combined)	Land tenure ship					Total
	Own	Share	Mortgage	Lease	Others	
<=0.04	262	15	5	9	1	292
0.05-0.49	1603	119	75	120	22	1939
0.50-0.99	239	11	5	34	3	292
1.00-1.49	86	1	3	11	0	101
1.50-2.49	57	1	2	15	0	75
2.50-4.99	16	1	1	6	0	24
5.00-7.49	2	0	0	2	0	4
7.50+	1	0	0	0	0	1
Average	2266	148	91	197	26	2728

Table-4.9b: Number of households by type of land tenure ship and by size of land planted.

Size of land planted (Local)	Land tenure ship					Total
	Own	Share	Mortgage	Lease	Others	
<=0.04	161	10	4	8	1	184
0.05-0.49	721	65	27	71	2	886
0.50-0.99	350	4	1	2		37
1.00-1.49	4					5
1.50-2.49		1				5
2.50-4.99						
5.00-7.49						
7.50+						
Average	921	80	32	81	3	1117

Table-4.9c: Number of households by type of land tenure ship and by size of land planted.

Size of land planted (HYV)	Land tenure ship					Total
	Own	Share	Mortgage	Lease	Others	
<=0.04	101	5	1	1		108
0.05-0.49	882	54	48	49	20	1053
0.50-0.99	209	7	4	32	3	255
1.00-1.49	81	1	3	11		96
1.50-2.49	53		2	15		70
2.50-4.99	16	1	1	6		24
5.00-7.49	2			2		4
7.50+	1					1
Average	1345	68	59	116	23	1611

Table-4.10a: Area (acres) covered in sample by type of land tenure ship and by size.

(Fig in acres)

Size of land planted(Combined)	Land tenure ship					Total
	Own	Share	Mortgage	Lease	Others	
<=0.04	7.53	0.48	0.16	0.30	0.02	8.49
0.05-0.49	274.40	17.51	10.03	22.23	4.78	328.95
0.50-0.99	154.50	6.00	2.65	24.38	2.20	189.73
1.00-1.49	98.46	1.25	3.53	12.80		116.04
1.50-2.49	104.07	2.00	3.80	25.32		135.19
2.50-4.99	49.93	3.50	3.5	20.81		77.74
5.00-7.49	10.70			10.25		20.95
7.50+	15.00					15.00
Average	714.59	30.74	23.67	116.09	7.00	892.09

Table-4.10b: Area (acres) covered in sample by type of land tenure ship and by size.

(Fig in acres)

Size of land planted(Local)	Land tenure ship					Total
	Own	Share	Mortgage	Lease	Others	
<=0.04	4.77	0.34	0.13	0.27	0.02	5.53
0.05-0.49	103.74	8.29	3.16	9.59	0.57	125.35
0.50-0.99	18.20	2.30	0.53	1.40		22.43
1.00-1.49	5.29					5.29
1.50-2.49	7.89	2.00				9.89
2.50-4.99						
5.00-7.49						
7.50+						
Average	139.89	12.93	3.82	11.26	0.59	168.49

Table-4.10c: Area (acres) covered in sample by type of land tenure ship and by size.

(Fig in acres)

Size of land planted (HYV)	Land tenure ship					Total
	Own	Share	Mortgage	Lease	Others	
<=0.04	2.76	0.14	0.03	0.03		2.96
0.05-0.49	170.66	9.22	6.87	12.64	4.21	203.60
0.50-0.99	136.30	3.7	2.12	22.98	2.20	167.30
1.00-1.49	93.17	1.25	3.53	12.80		110.75
1.50-2.49	96.18		3.80	25.32		125.30
2.50-4.99	49.93	3.50	3.50	2081		77.74
5.00-7.49	10.70			10.25		20.95
7.50+	15.00					15.00
Average	574.70	17.81	19.85	104.83	6.41	723.60

Table-4.11a ; Number of households by division and by size of land planted

Size of land planted(Combined)	Division						Total
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Sylhet	
<=0.04	24	69	67	40	48	44	292
0.05-0.49	43	317	350	184	1003	42	1939
0.50-0.99		22	40	5	225		292
1.00-1.49		3	12		86		101
1.50-2.49			20		55		75
2.50-4.99			10		14		24
5.00-7.49			2		2		4
7.50+			1				1
Average	67	411	502	229	1433	86	2728

Table-4.11b: Number of households by division and by size of land planted.

Size of land planted(Local)	Division						Total
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Sylhet	
<=0.04	1	51	54	0	34	44	184
0.05-0.49	8	173	193	7	480	25	886
0.50-0.99	0	6	4	0	27	0	37
1.00-1.49	0	2	0	0	3	0	5
1.50-2.49	0	0	1	0	4	0	5
2.50-4.99	0	0	0	0	0	0	0
5.00-7.49	0	0	0	0	0	0	0
7.50+	0	0	0	0	0	0	0
Average	9	232	252	7	547	69	1117

Table-4.11c: Number of households by division and by size of land planted.

Size of land planted(HYV)	Division						Total
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Sylhet	
<=0.04	23	18	13	40	14		108
0.05-0.49	35	144	157	177	525	17	1053
0.50-0.99		16	36	5	198		255
1.00-1.49		1	12		83		96
1.50-2.49			19		51		70
2.50-4.99			10		14		24
5.00-7.49			2		2		4
7.50+			1				1
Average	58	179	250	222	885	17	1611

Table-4.12a: Total area (acres) covered in sample by division and by size

(Fig in acres)

Size of land planted (combined)	Division						Total
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Sylhet	
<=0.04	0.57	1.98	1.94	1.08	1.54	1.38	8.49
0.05-0.49	6.05	49.47	50.34	22.83	194.35	5.91	328.95
0.50-0.99		14.53	27.80	2.95	144.45		189.73
1.00-1.49		3.40	14.80		97.84		116.04
1.50-2.49			34.91		100.28		135.19
2.50-4.99			33.51		44.23		77.74
5.00-7.49			10.95		10.00		20.95
7.50+			15.00				15.00
Average	6.62	69.38	189.25	26.86	592.69	7.29	892.09

Table-4.12b: Total Area (acres) covered in sample by division and by Size.

(Fig in acres)

Size of land planted(local)	Division						Total
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Sylhet	
<=0.04	0.02	1.49	1.56		1.08		5.53
0.05-0.49	0.85	21.49	21.85	1.00	77.51	1.38	125.35
0.50-0.99		3.80	2.90		15.73	2.65	22.43
1.00-1.49		2.20			3.09		5.29
1.50-2.49			2.24		7.65		9.89
2.50-4.99							
5.00-7.49							
7.50+	0.87	28.98	28.55	1.00	105.06	4.03	168.49
Average							

Table-4.12c: Total Area (acres) covered in sample by division and by Size.

(Fig in acres)

Size of land planted(HYV)	Division						Total
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Sylhet	
<=0.04	0.55	0.49	0.38	1.08	0.46	3.26	2.96
0.05-0.49	5.20	27.98	28.49	21.83	116.84		203.60
0.50-0.99		10.73	24.90	2.95	128.72		167.30
1.00-1.49		1.20	14.80		94.75		110.75
1.50-2.49			32.67		92.63		125.30
2.50-4.99			33.51		44.23		77.74
5.00-7.49			10.95		10.00		20.95
7.50+			15.00				15.00
Average	5.75	40.40	160.70	25.86	487.63	3.26	723.60

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 Aman 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

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।

গোল আলু 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। গোল আলুর প্রকার ভেদে জমির খন্ডের পরিমাণ, মালিকানা, চাষের ধরন এবং খরচ (টাকা)

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

আলুর প্রকারের কোড ঃ দেশী/স্থানীয়-১ ও উফশী-২ **মালিকানা কোডঃ নিজস্ব-১, বর্গা-২, বন্ধক-৩, লীজ-৪ এবং অন্যান্য-৫**

২। বীজ, আলু রোপণ, নালা প্রস্তুত, সেচ, কীটনাশক, আলু উত্তোলন শ্রমিকের সংখ্যা ও খরচ (টাকা)

খন্ড	বীজ		আলু রোপণ			নালা প্রস্তুত/খড় কুটো দিয়ে ঢেকে দেয়া			সেচ খরচ (টাকা)	কীটনাশক খরচ (টাকা)	আলু উত্তোলন			অন্যান্য খরচ (টাকা)	মোট খরচ (টাকা)
	পরিমাণ (কেজি)	খরচ (টাকা)	শ্রমিকের সংখ্যা		খরচ (টাকা)	শ্রমিকের সংখ্যা		খরচ (টাকা)			শ্রমিকের সংখ্যা		খরচ (টাকা)		
			পারিঃ	ভাড়া		পারিঃ	ভাড়া				পারিঃ	ভাড়া			
১	**২**	**৩**	**৪**	**৫**	**৬**	**৭**	**৮**	**৯**	**১০**	**১১**	**১২**	**১৩**	**১৪**	**১৫**	**১৬**
১ম															
২য়															
৩য়															
৪র্থ															
৫ম															

পারিঃ পারিবারিক **(পারিবারিক কর্মী হলে মজুরী বাজার দরে লিখতে হবে)**

৩। সার ব্যবহারের পরিমাণ (কেজি) এবং মূল্য (টাকা)

খন্ড	ইউরিয়া		টিএসপি		গোবর/জৈব		খৈল		অন্যান্য	মোট (টাকা)
	পরিমাণ	মূল্য	পরিমাণ	মূল্য	পরিমাণ	মূল্য	পরিমাণ	মূল্য	মূল্য	
১	**২**	**৩**	**৪**	**৫**	**৬**	**৭**	**৮**	**৯**	**১০**	**১১**
১ম										
২য়										
৩য়										
৪র্থ										
৫ম										

৪। উৎপাদিত ফসলের পরিমাণ (মণ) ও মূল্য (টাকা)

খন্ড	ফসল (আলু)	
	পরিমাণ (মণ)	মূল্য (টাকা)
১	**২**	**৩**
১ম		
২য়		
৩য়		
৪র্থ		
৫ম		

(১ মণ=৪০ কেজি)

৫। গোল আলুর মৌসুমে গোল আলু 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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