Report on the Cost of Production of Jute Crop 2008-09

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

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Foreword

Bangladesh is basically an agriculture based country. Though the contribution of industrial sector to the gross domestic product (GDP) is gradually increasing over the decades still agriculture sector plays strong dominance in the economy of Bangladesh. Most importantly, food security of the vast population of the country is critically dependent on the production of crops locally. Therefore, the development of agriculture sector is directly related with the development of our country.

Cost plays a vital role on production of agricultural crop. Every year Government declares procurement prices before harvesting time of 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 know the cost of production.

I am happy to know that the UCPSCP Project performed successfully the responsibility of conducting surveys for the first time. I hope that data presented in this publication would be very much helpful and useful in policy formulation and planning for the development of agricultural sector of the country.

I would like to extend my thanks to the Director General, BBS, the Project Director and her other colleagues who worked hard to prepare this report.

Dhaka,
June,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 the 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,
June, 2010.

Md. Shahjahan Ali Mollah

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Key Findings: At a glance

SL. No.	Items of study	Result
1.	Percentage of household having jute cultivation in the sample area	17.52
2.	Percentage of household growing Jute by land tenure:	
	a. Own	68.19
	b. Share cropping	14.21
	c. Mortgage	11.38
	d. Lease	1.36
	e. Others	4.85
3.	Yield of jute fibre per acre(in maund)	20.40
4.	Yield of jute stalk per acre (in maund)	25.50
5.	Number of labourers employed by component for per acre production of jute:	
	a. Weeding	22
	b. Harvesting	13
	c. Retting	5
	d. Peeling	11
	e. Drying	5
	Total	56
6.	Number of family labourers worked for per acre jute production	10
7.	Production cost of jute per maund (in taka)	759
8.	Farm-gate price per maund (in taka):	
	a. Jute fibre	880
	b. Jute stalk	182
9.	Cost of land preparation per acre (in taka):	1898
10.	Cost of seeds per acre (in taka)	452

Key Findings: At a glance

SL. No.	Items of study	Result
11.	Cost of fertilizers by type per acre (in taka):	
	a. Urea	395
	b. TSP	224
	c. MoP	124
	d. DAP	240
	e. Organic	70
	Total	**1053**
12.	Cost of insecticides per acre (in taka)	126
13.	Cost of weeding per acre (in taka)	3331
14.	Cost of harvesting per acre (in taka)	1850
15.	Cost of retting per acre (in taka)	712
16.	Cost of peeling per acre (in taka)	1627
17.	Cost of drying per acre (in taka)	594
18.	Cost of leasing per acre (in taka)	3832

Chapter 1

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 GDP of the country. Earlier more than 50% of GDP came from this sector. When industrialization transition 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. Jute is the most important cash crop of Bangladesh. Bangladesh is earning a huge amount of foreign currency through exporting jute abroad. Earlier about 75% of foreign exchange was earned by this country through exporting jute and this is why the jute was called the "Golden fibre" of Bangladesh. Due to the presence of synthetic fibre the market for jute and jute goods became limited. Demand for jute abroad started reducing to a remarkable extent and it was a bolt from the blue for the jute production and export of Bangladesh. Farmers got less interest for the production of jute. As a result, production of jute also started reducing. Now the situation is changing. Realization about the bad effect of synthetic fibre and good effect of natural jute fibre to the environment is increasing day by day among the people of the country and abroad. As a result, jute is getting back its past glory. This is the proper time for the government and the private sector to work together with sincerity to boost up the jute production using modern technology to retain the position in the export field of the competitive free market. Special attention needs to be paid to the research sector for variety(multiple) use of jute products. The cost of jute production for the year 2008-09 will be very helpful for government, users and researchers to finalize their respective programmes. The government must have to give emphasis to develop the jute industry and improve the export processing of jute fibre and jute goods.

1.1 Jute: The Major cash Crop of Bangladesh

Jute is a natural fibre which is derived from mainly two plant varieties named Olitarius (Tossa Jute) and Capsularis (White Jute). The jute that grows in relatively low land and is sown during the period of March and April is called Capsularis, and the jute usually planted during the period of April and May is said to be Olitorius. It holds 95 percent of the total share of jute. The most significant characteristics of jute are that it is free from health hazards and environment pollution. It is also versatile, durable, reusable, cheap and superior to synthetics. It is regarded as the best natural substitute for nylon and polypropylene. Recently it has been termed as the major solution for the eco-friendly product of tomorrow.

Traditionally jute has been used as a raw material for manufacturing yarns and twines, hessian, burlap and bulk packaging. Jute is also used in making different kind of artistic handicrafts which are also getting popularity day by day at home and abroad. However, to speak the truth, jute has been closely attached with the cultures, society and economy of Bangladesh for centuries. The major portion of foreign currency is still earned by the country through exporting Jute and Jute goods to abroad.

1.2 Jute as Export Commodity:

Bangladesh consistently resumes the status of the largest exporter of raw jute in the world. More than 80% of raw jute are imported throughout the world from Bangladesh. Bangladesh has also strong hold in exporting jute textile products or jute goods to the other countries of the world.

Once jute was regarded as the ‘Golden Fibre of Bangladesh’ as the most part of export earnings would be earned from exporting jute. Subsequently it lost its glory as the alternative fibre synthetic occupied the market of jute. But in the recent years, jute is getting back its lost credit for its unique attribute- environment friendly fibre, and synthetic are getting pushed out from the market due to its harmful nature to the environment. The present world extremely aware of the environment is again accepting jute instead of artificial synthetic. As a result, the demand of jute in the world again begins to increase significantly. Thus Bangladesh as a leader in the market of jute in the world should pay proper attention to boost up the production of jute.

Table 1: Export of Jute (Raw Jute and Jute Goods) during 2000-01 to 2007-08.

(Value in Million Taka)

Year	Raw Jute	Jute Goods	Total	Growth
2000-01	2735	12151	14886	-
2001-02	2734	14217	16951	13.87
2002-03	2848	17106	19954	17.72
2003-04	4692	12569	17261	-13.50
2004-05	5269	11615	16884	-2.18
2005-06	9004	18836	27840	64.89
2006-07	11930	26757	38687	38.96
2007-08	12874	28142	41016	6.02

Source: Foreign Trade Statistics of Bangladesh, 2003-04 & 2004-05 and 2007-08.

Export of jute (Raw Jute and Jute goods) for the periods 2000-01 to 2007-2008 is presented in table 1.It is evident from table 1 that the export earning from jute, both raw jute and jute goods, substantially increased over the last eight years and it has augmented to Tk.41016 million in 2007-08, which is almost triple as compared to that Tk.14886 million in 2000-01. Unquestionably, it's a tremendous achievement for Bangladesh in this field, but there is a huge scope to earn more foreign currency by exporting more jute by increasing its production.

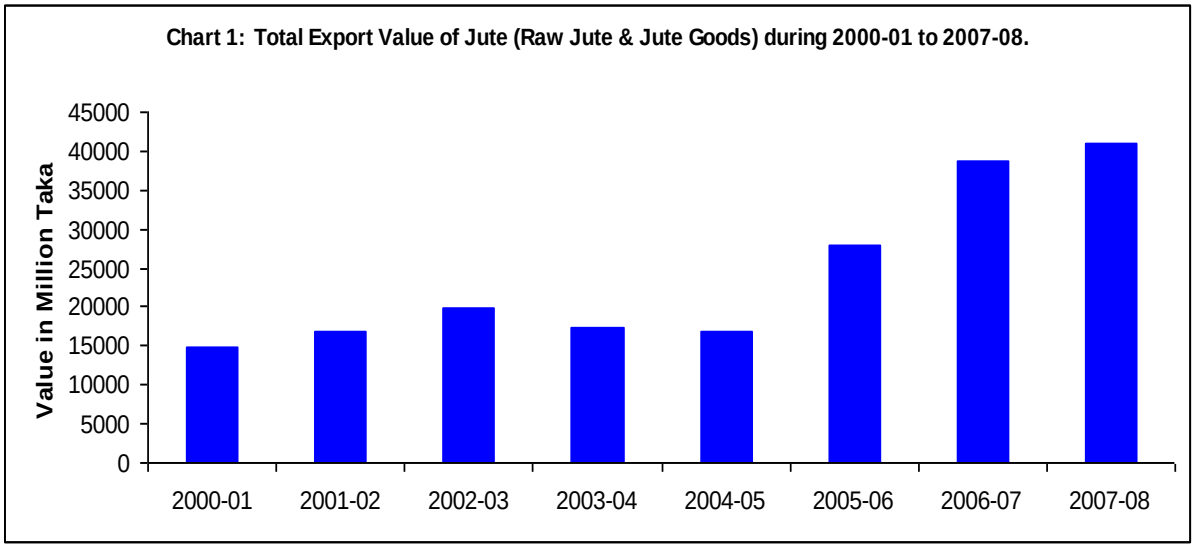
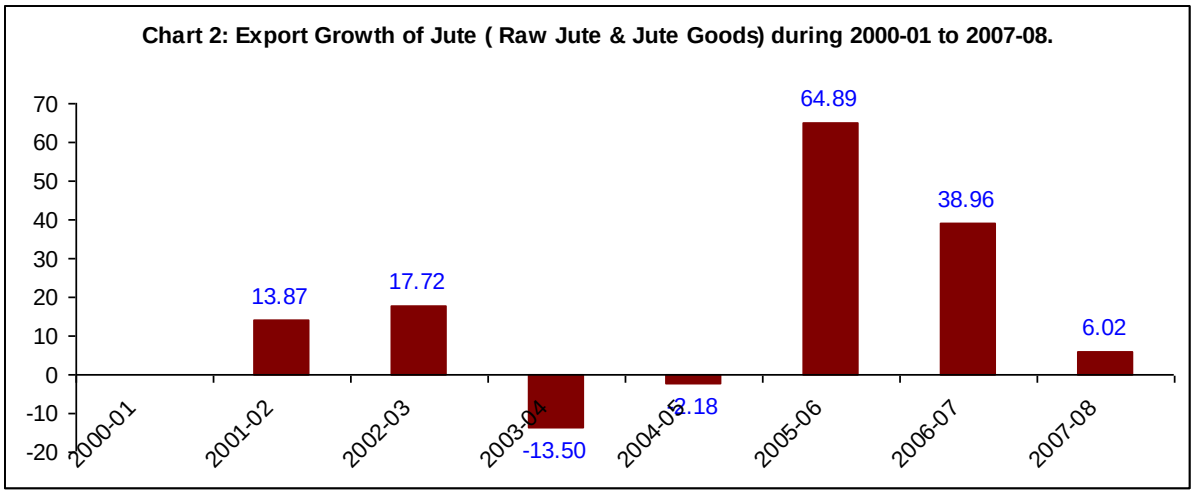


Chart 1 also shows the trend of export earnings from jute. From this chart it is noticed that export earnings is constantly going up from 2000-01 to 2002-03, then it has slightly fallen during 2003-04 and 2004-05, and again it started to rise up from 2005-06 and significantly increased in 2007-08.



(Note: Actually here the growth rate means the percentage change of export earning at current year as against that of the previous year.)

Chart 2 explains the growth rate of export earnings of jute during the last eight years. The highest growth is recorded in 2005-06, which is 64.89 percent, and the lowest is 6.02 percent in 2007-08. Negative growth is also observed during 2003-04 and 2004-05.

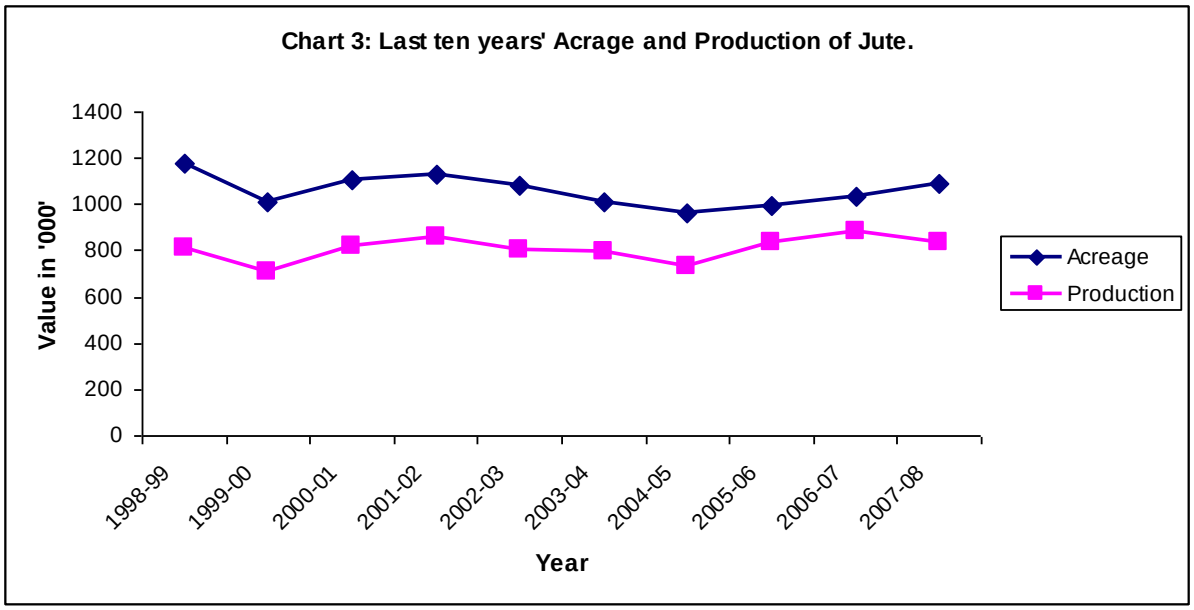
1.3 Production of Jute:

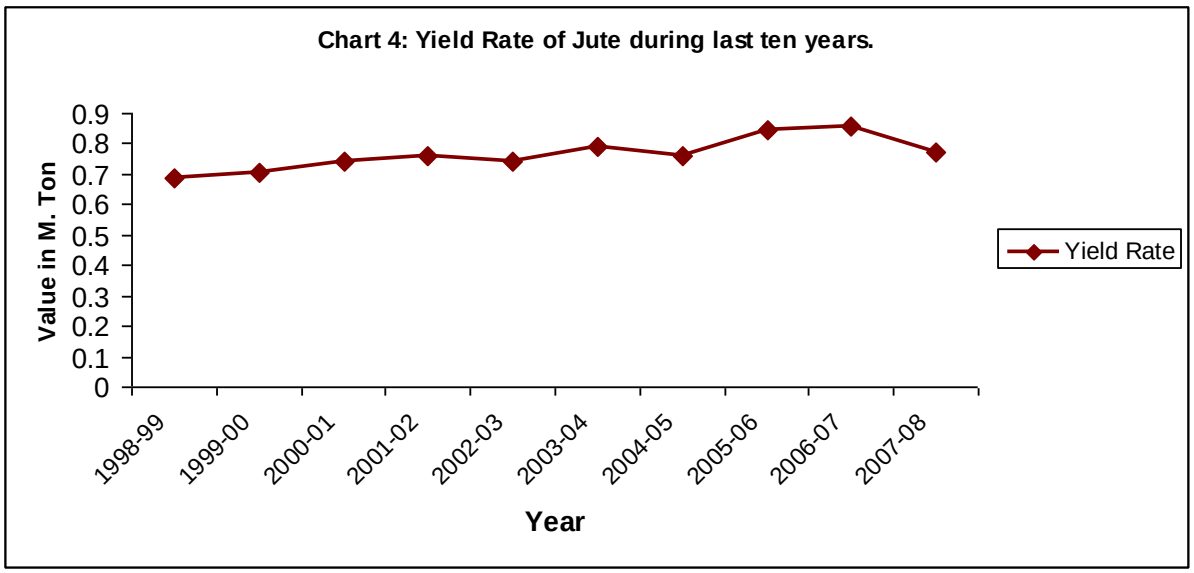
Bangladesh occupies majority of lands in the Great Bengal plane of the Ganges Delta with affluent alluvial soils. Moreover, it lies in a geographic area with plentiful water resources and hot and humid monsoon climate. All these factors have made Bangladesh the most significant for jute cultivation in the world. However the overall natural climatic and geographic condition of Bangladesh is blissful for growing jute.

Table 2: Acreage, Production and Yield Rate of Jute during the last ten years.

Year	Jute		
	Area (in '000' acres)	Production (in '000' M. Tons)	Yield Rate (M. Tons)
1998-99	1181	812	0.688
1999-00	1008	711	0.705
2000-01	1107	821	0.742
2001-02	1128	859	0.762
2002-03	1079	800	0.741
2003-04	1008	794	0.788
2004-05	965	732	0.759
2005-06	993	838	0.844
2006-07	1034	886	0.857
2007-08	1089	839	0.770

Source: Statistical Year Book of Bangladesh 2008, Page-125.





Acreage, production and yield rate of jute are portrayed in table 2. Table 2 shows that during the last ten years, jute has been cultivated at the highest area of land- 1181 thousand acres in 1998-99, and after that it began to decrease and continued to decline upto 2004-05. The cultivation of jute has fallen remarkably down in the year of 2004-05, when it was cultivated only in 965 thousand acres of land which reflects the lowest acreage during the last ten years. Afterwards, plantation of jute started to increase, but insignificantly, and still the increasing trend has been resumed.

It is also observed from the table that the production of jute does not follow the irregular trend as seen in case of acreage, i.e. more acreage holds more production and vice-

versa. During the last ten years, the highest amount of jute, 886 thousands tons, has grown in the year of 2006-07 when the lands used for cultivation were 1034 thousand acres, not the highest ; and the lowest production is observed in the year of 1999-00 when the lands cultivated were 1008 thousand acres which does not reflect the lowest area.

During the last ten years, the highest yield rate 0.857 M. Tons is observed in 2006-07 and the lowest yield rate 0.688 M.tons in 1998-99.

It is clear from the table that in the last decade the yield rate remained almost similar showing irregular but slight increasing trend. To face the challenges of free market in the world, there is no other alternative except increasing yield rate. To increase the yield rate attempts must be taken to boost up the quality jute production through using, instead of traditional method, the modern technology and imported varieties of inputs. Policy makers, researchers and cultivators together must come forward to do the needful and achieve the goals.

1.4 Objective of the Survey:

The specific objectives of the survey are:

- to estimate per acre production cost of jute;
- to estimate per maund production cost of jute.

The other objectives of the survey are as follows:

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

Chapter 2

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. Jute 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 Jute, 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 jute 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:

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 jute 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.

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 jute as well. They discuss the matter with the farmers who grow jute. 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.

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.

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 jute 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.

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.

2.2.2 Training:

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.

2.2.3 Method of Data Collection:

Face to face interview has been carried out following Paper and Pencil (PAPI) method. Data collection has been taken place from 14 to 25 October 2008 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.

2.2.4. 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.

2.2.5 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:

(i). 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.

(ii). 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.

(iii). 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 programme to avoid errors and inconsistency.
- **Treatment of Missing values:** The data entry programme has been designed not to allow blanks that ensure not having missing values in the data.
- **Incomplete records and dropped cases.** The data entry programme 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 programme has been designed in view of rejecting duplication of entries based on the identifiers.

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

(iv). **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.

(v). 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.

(vi). 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.

(vii). 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.

2.3 Tabulation:

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

2.4.(i) Data Analysis:

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 jute have also been explained nationally.

(ii). Data Dissemination:

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 Agricultural Statistics of Bangladesh, and Monthly Statistical Bulletin etc.

Chapter 3

Findings of the Survey

This chapter deals with the factors of production with cost related to jute crop. The factors addressed are (i) land teanurship such as own, share cropping, mortgage, lease and others. ii) labour employed by phase such as land preparation, sowing, weeding, harvesting, retting, peeling and drying, iii) use of insecticides, fertilizers, plough, power tiller etc. iv) productivity and cost etc.

3.1 Jute Producing Households (HH)

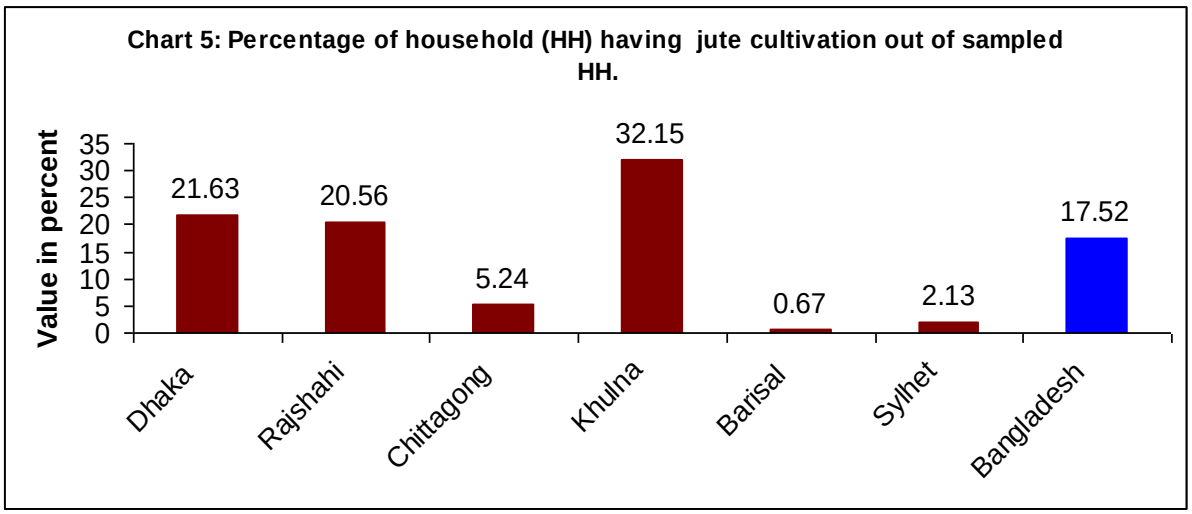
This survey has dealt with the total of 24625 household across the country, of which only 4314 HH were involved in jute cultivation. Table 3.1 shows that only 17.52 percent HH at national level cultivate jute indicating that a small number of farmers grow jute in Bangladesh. This might have been caused due to increasing demand for food. As the demand for food is increasing day by day the farmers have shifted cultivation from non-food crops to food crops, which is more profitable than that of jute.

Table-3.1: Distribution of sample and percentage of household (HH) having jute cultivation out of sampled household by division. 2008-2009

Division	Total number				% of HH having jute
	PSU	SSU	USU(HH*)	HH having jute	
Dhaka	25	25	6250	1352	21.63
Rajshahi	28	28	7000	1439	20.56
Chittagong	16	16	3625	190	5.24
Khulna	16	16	4000	1286	32.15
Barisal	9	9	2250	15	0.67
Sylhet	6	6	1500	32	2.13
Bangladesh	**100**	**100**	**24625**	**4314**	**17.52**

Distribution of sample and percentage of households having jute cultivation by division is shown in the table 3.1. It is observed that in Barisal the lowest percentage of HH, only 0.67% cultivates jute and the highest, 32.15 percent in Khulna. It is also mentionable that a significant proportion of the HHs in three divisions, Khulna (32.15%), Dhaka (21.63%)

and Rajshahi (20.56%), which are much higher than the national percentage (17.52%), whereas very negligible percentage of the HHs of the other three divisions of Barisal (0.67%), Sylhet (2.13%) and Chittagong (5.24%), which are much lower than the national percentage. So, it is a matter of study why jute cultivation is not evenly distributed across the country.



3.2 Jute Cultivation in light of Land Tenureship.

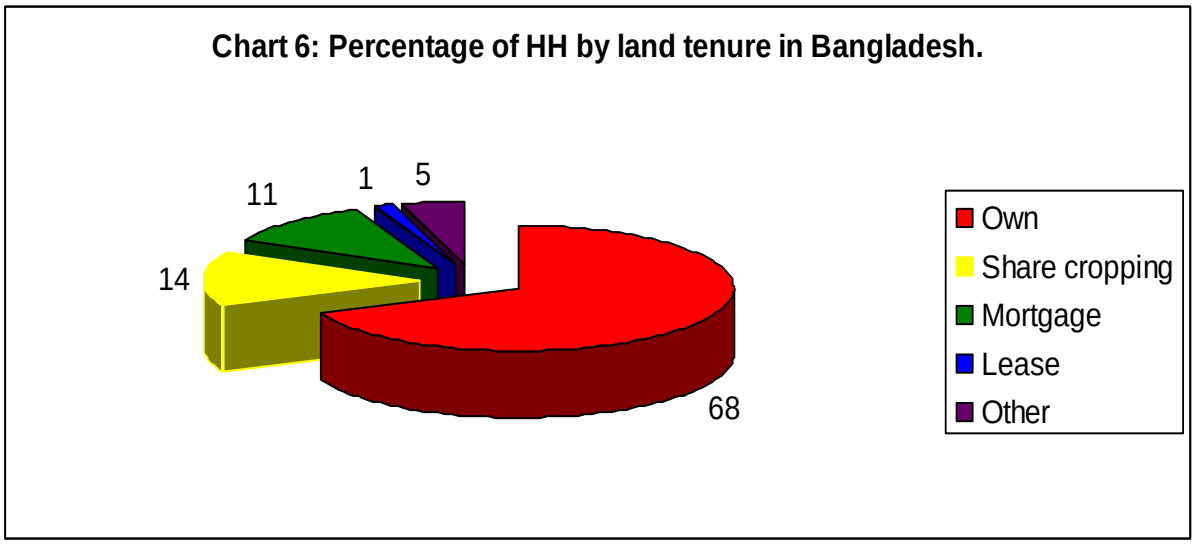
Table 3.2 shows percentage of households growing jute crop by type of land tenure and by division. It is seen from the table that at national level, the highest 68.19 percentage of the total HH grow jute in their own land and the lowest only 1.36 percent produces it occupying the land as lease. Share cropping holds 14.21 percent and mortgage 11.38 percent, with a considerable percentage of the total.

Table 3.2: Percentage of HH growing jute crop by type of land tenure and by division. 2008-2009

Division	Percentage (%)					
	Own	Share cropping	Mortgage	Lease	Other	Total
Dhaka	67.31	11.88	13.63	0.65	6.52	100
Rajshahi	79.11	12.08	6.96	1.60	0.25	100
Chittagong	54.91	13.33	6.96	24.10	0.69	100
Khulna	63.14	26.85	5.25	3.33	1.44	100
Barisal	56.77	43.23	-	-	-	100
Sylhet	100	-	-	-	-	100
Bangladesh	**68.19**	**14.21**	**11.38**	**1.36**	**4.85**	**100**

(Note: Some figures in case Barisal and Sylhet division are missing. This might have happened due to small number of sample).

Divisional variation is also observed in this table. It is found that in Dhaka the highest 67.31 percentage of HHs cultivate jute in own land and the lowest 0.65 percent in leasing land; in Rajshahi the highest 79.11% in own land and the lowest 0.25% in other; in Chittagong the highest 54.91% in own land and the lowest 0.69 in other; in Khulna the highest 63.14% in own land the lowest 1.44% in other and in Barisal, between two types- own and share cropping, the highest is in own land. It is noticeable that the category of own land in land tenure strongly dominates jute cultivation and the contribution of share cropping both at national (14.21%) and division level, Dhaka (11.8%), Khulna (12.08%), Chittagong (13.33%), Rajshahi (26.85%) and Barisal (43.23%), is also significant.



3.3 Area, Production and Yield of Jute (as per survey area)

Table 3.3(a). Area, total production and yield per acre of jute by division. 2008-2009.

Division	Area under Jute(in acres)	Total production(in maunds)	Yield per acre(in maunds)
Dhaka	4068.76	83463	20.51
Rajshahi	662.62	13458	20.31
Chittagong	43.36	817	18.84
Khulna	886.50	17781	20.06
Barisal	3.47	69	19.97
Sylhet	7.53	129	17.13
Bangladesh	**5672.24**	**115717**	**20.40**

Note: 1 maund=40 kilograms.

Table 3.3(a) focuses on yield per acre by division and at national level as well. It is evident from the table that per acre yield at national level is recorded as 20.40 maunds. Divisional variations are observed in per acre yield rate of Jute. It is seen from the table that Dhaka division holds the highest position with 20.51 maunds, followed by Rajshahi division with 20.31 maunds, Khulna 20.06 maunds. Three divisions Barisal, Chittagong and Sylhet hold respectively 19.97, 18.84 and 17.13 maunds, which are below the national rates 20.40 maunds. The lowest rate is seen in the Sylhet division. Variations in rates among divisions may be due to soil fertility and quality of other inputs used for the Jute production.

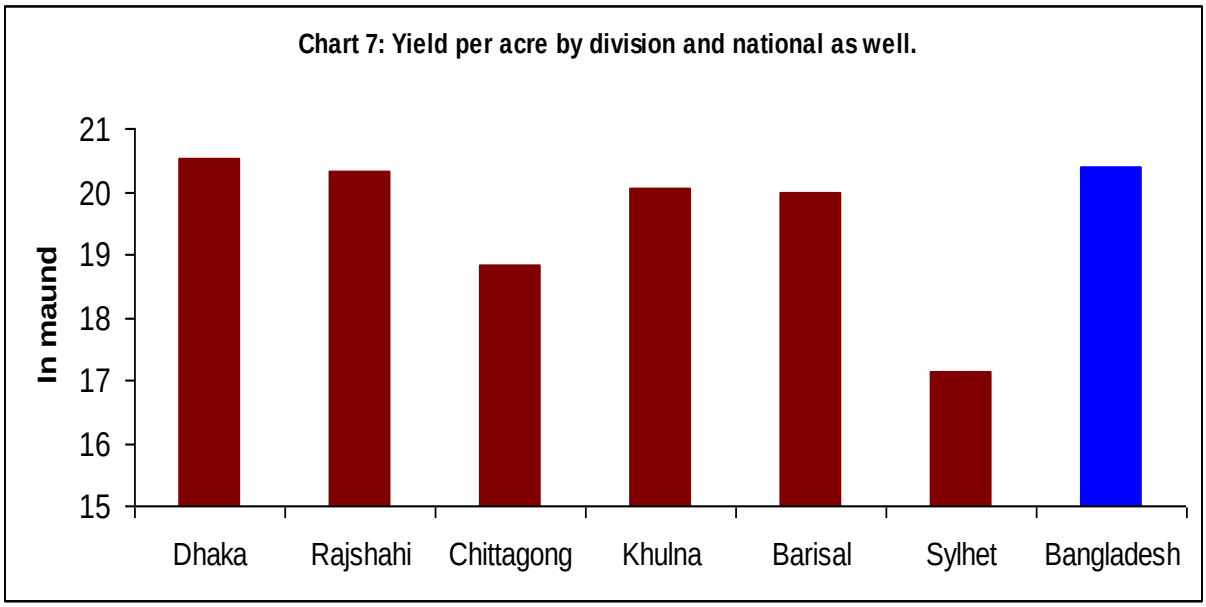
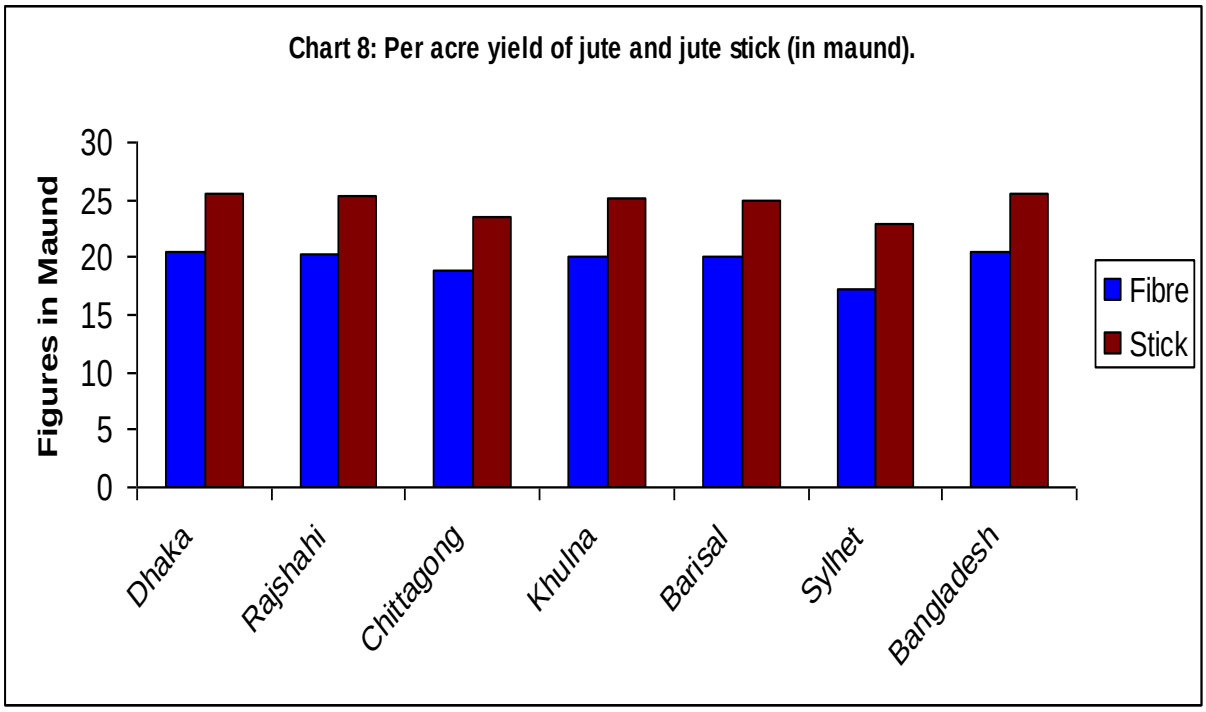


Table 3.3(b): Per acre yield of jute fibre and jute stalk (stick) by division.

Division	Per acre Yield (in maunds)	
	Fibre	Stalk (Stick)
Dhaka	20.51	25.64
Rajshahi	20.31	25.38
Chittagong	18.84	23.55
Khulna	20.06	25.07
Barisal	19.97	24.96
Sylhet	17.13	22.97
Bangladesh	**20.40**	**25.50**

Table 3.3(b) shows per acre yield of fibre and stalk of jute by divison. In this table not only fibre but also stalk of jute plant has been taken into consideration. Dried stalks are used locally for fuel and fencing. So it carries economic importance. However it is evident from the table that at national level per acre yield of jute fibre is 20.40 maunds and per acre yield of jute stalk is 25.50 maunds. Among the divisions the highest amount of fibre 20.51 maunds are produced at Dhaka whereas the lowest 17.13 maunds at Sylhet ; and the highest amount of stalk 25.64 maunds are produced in Dhaka as well whereas the lowest 22.97 maunds also at Sylhet. In three divisions namely Dhaka, Rajshahi and Khulna, production of both fibre and stalk are almost equal to that at national level. Furthermore, it can be said that there is no significant variation of production of both fibre and stalk among the divisions, and even divisional figures with national figure.



3.4 Labourer and Family Labourer employed for production of Jute

Total number of labourers employed by components for per acre production of Jute in 2008-2009 are shown in table 3.4(a). The table depicts that the largest number of labourer (22) for producing jute at national level is entangled for weeding whereas the smallest number (5) for retting and drying. The act of weeding still remains dependent on labour.

Significant number of labourers are needed for both harvesting (13) and peeling (11). However, the total of 56 labourers are required for per acre production of Jute.

If the figures are examined by division, it is unearthed that the number of labours for weeding, Dhaka (22), Khulna (24), Chittagong (23), Rajshahi (22), Barisal (22) and Sylhet (20), gets extensively dominance. As like as national level, considerable number of labourer is used for harvesting and peeling at all divisions. In weeding the highest (24) at Rajshahi and the lowest (20) at Sylhet; in harvesting the highest (15) at Khulna and the lowest at Sylhet (11); In retting the highest (5) at four division Rajshahi, Khulna, Chittagong and Barisal and the lowest (4) at two division Dhaka and

Table 3.4(a):Total number of labourers employed by components for per acre production of jute.

Division	Weeding	Harvesting	Retting	Peeling	Drying	Total
Dhaka	22	13	4	12	5	56
Rajshahi	24	13	5	12	6	60
Chittagong	23	14	5	12	5	59
Khulna	22	15	5	11	5	58
Barisal	22	12	5	12	4	55
Sylhet	20	11	4	11	5	51
Bangladesh	**22**	**13**	**5**	**11**	**5**	**56**
Percentage	**39.28**	**23.21**	**8.93**	**19.64**	**8.93**	**100**

Sylhet; in peeling highest (12) at four division each such as Dhaka, Rajshahi, Chittagong and Barisal and the lowest 11 at two divisions each such as Khulna and Sylhet; equivalent to national lavel in drying the highest (5) at four divisions Dhaka, Chittagong, Khulna and Sylhet and the lowest (4) at Barisal. Among the divisions the highest number of total labourer (60) is needed at Rajshahi, which is higher than national figure (56) and the lowest (51) at Sylhet.By activity the weeding covers the highest percentage of labourers (39.3%) followed by harvesting (23.2%),peeling(19.6%), retting (8.9%) and drying (8.9%). There is no significant variation in the number of labourers for any activity by division.

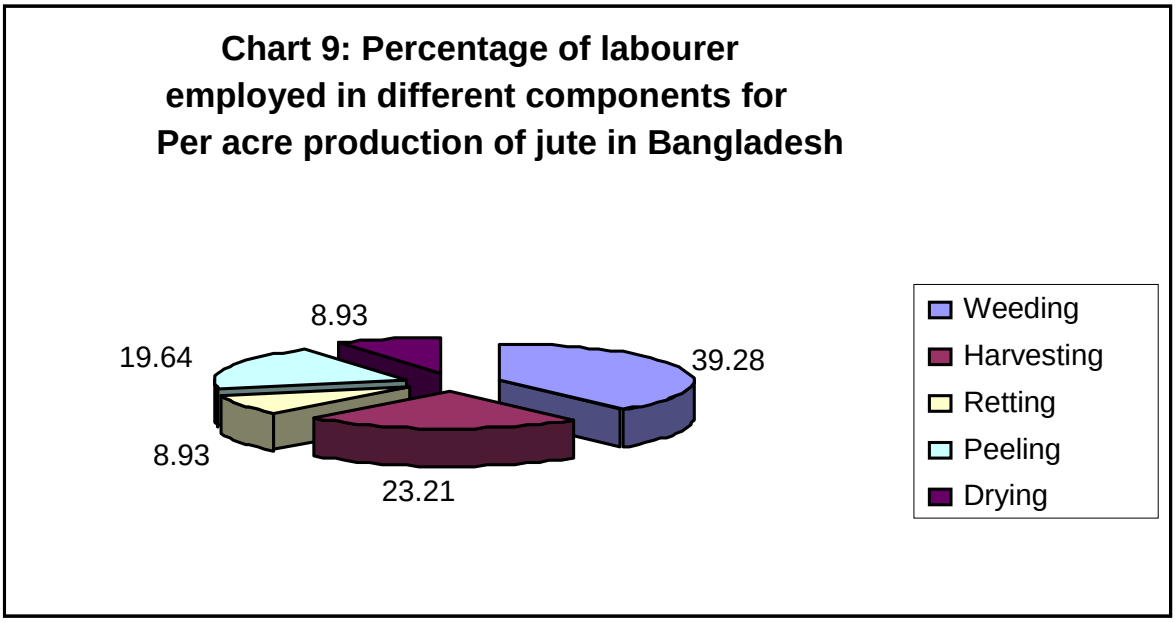


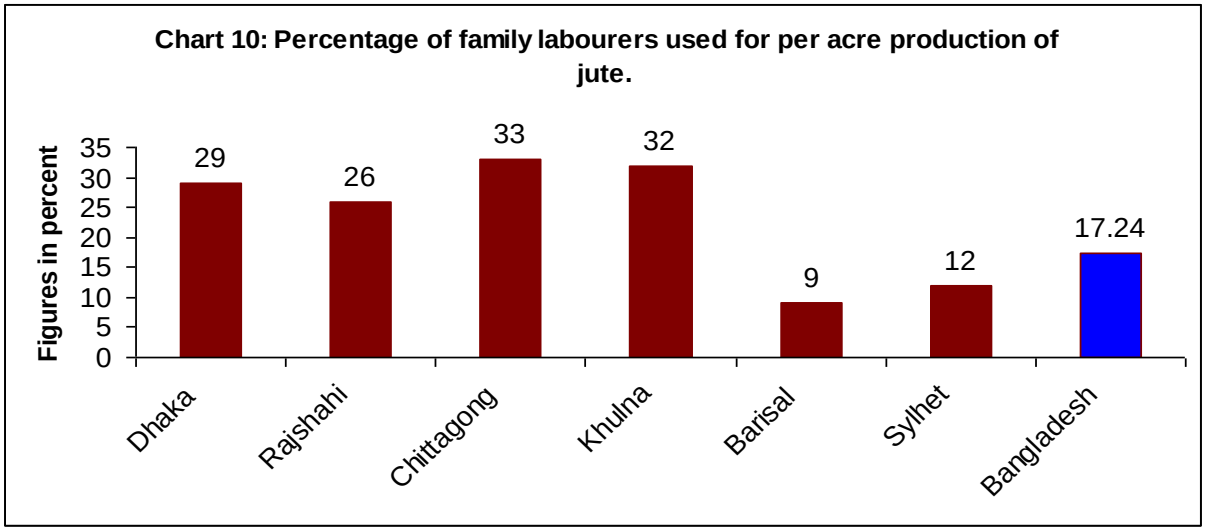
Table 3.4(b): Total number of labourers, family labourers and the percentage of family labourers required for per acre production of jute.

Division	Total	Total family labourers	Percentage of family labourers
Dhaka	56	17	30.36
Rajshahi	60	16	26.67
Chittagong	59	20	33.90
Khulna	58	19	32.76
Barisal	55	5	9.09
Sylhet	51	6	11.76
Bangladesh	**56**	**10**	**17.85**

Total number of labourers, family labourers, and the percentage of family labourers, required for per acre production of jute are exhibited in table 3.4(b) From this table it is clear that at national level out of 56 labourers, 10 are family labourers that represent 17.85 percent of the total labourers.

If the figures are considered by division, it is uncovered that the highest number of family labourers (20) are entangled in jute production in Chittagong division, which represents 33.9% of the total labourers, whereas the lowest only 5 in Barisal, which represents 9.09% of the total. It is notable that involvement of family labourers in production

of jute at four divisions of Dhaka (30.36%), Rajshahi (26.67%), Chittagong (33.9%) and Khulna (32.76%) in comparison to national level (17.85%) is significantly higher and that in two divisions Barisal (9.09%) and Sylhet (11.76%) dramatically lower than that at national level.



3.5 Production Cost of Jute

Per maund production cost and per maund farm-gate price of Jute fibre and stalk are presented in table 3.5(a). The table exposes that per maund production cost of jute at national level is Tk.759 and the farmgate prices of fibre and stalk are Tk.880 and Tk.182 respectively. It is definitely desirable that the value of production is higher than the cost. It is eventually true that the higher the profit, the higher the production, as the greater number of farmers will get interest to cultivate jute, which ultimatly leads to more production of jute.

Table 3.5(a): Per maund production cost and farm-gate price of jute and jute stalk.

Division	Jute fibre		Jute Stalk Per maund (Tk.)
	Production cost per maund (Tk.)	Farm-gate price Per maund (Tk.)	
Dhaka	755	954	140
Rajshahi	765	910	227
Chittagong	843	866	161
Khulna	768	936	178
Barisal	639	760	192
Sylhet	735	800	199
Bangladesh	**759**	**880**	**182**

If we see the data presented in table 3.5(a), it is found that production cost of fibre is the highest (Tk.843) in Chittagong and the lowest (Tk.639) in Barisal. But the different picture is observed in case of farm-gate price of fibre and stalk and total. The highest farm-gate price of fibre (Tk.954) is noticed in Dhaka division whereas the lowest (Tk.760) in Barisal; the highest price of stalk (Tk 227) in Rajshahi and the lowest (Tk.140) in Dhaka.

If the divisional figures are compared with that of national level, it reveals that production cost for three divisions, Rajshahi, Chittagong and Khulna is higher than that at national level, and it is significantly higher (Tk.843) in Chittagong division than that at national level (Tk.759), and lower in Dhaka, Barisal and Khulna division, considerably lower (Tk.639) in Barisal division. Total farm-gate price in three divisions Dhaka, Rajshahi and Khulna is higher than that at national level, and in the rest three divisions, it is lower than national level.

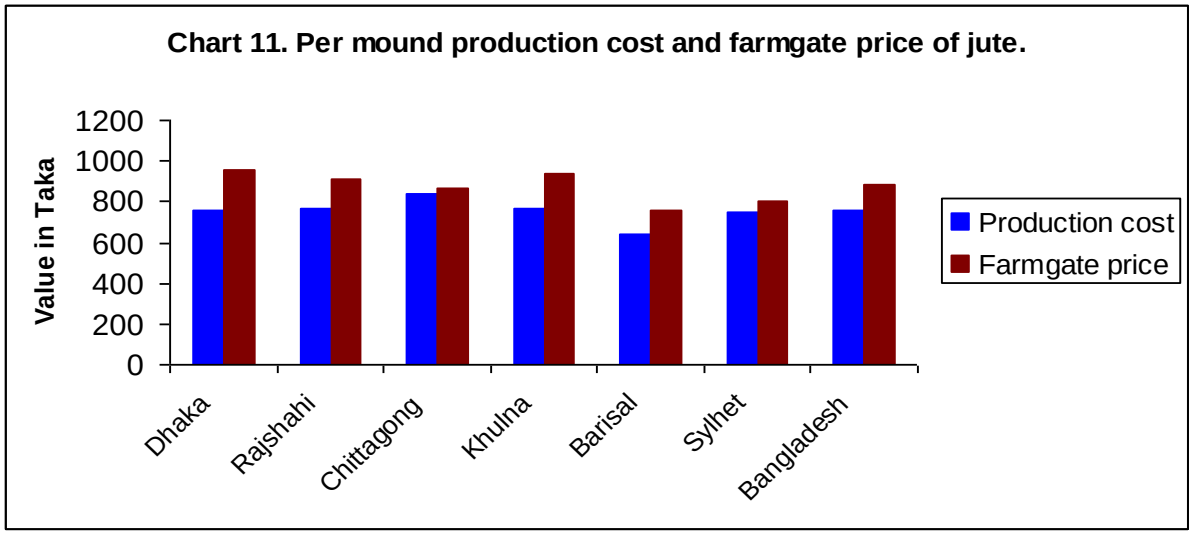


Table 3.5(b): Per acre cost (in Taka) of land preparation for jute cultivation by means and by division.

(in Tk.)

Division	Plough		Power Tiller		Others	Total
	Owned	Rented	Owned	Rented		
Dhaka	63	66	214	1295	271	1912
Rajshahi	294	286	172	995	176	1923
Chittagong	132	26	44	1483	137	1822
Khulna	300	204	62	1088	169	1823
Barisal	-	647	345	793	-	1785
Sylhet	132	348	94	913	330	1817
Bangladesh	**189**	**172**	**159**	**1168**	**210**	**1898**

Per acre cost of land preparation for jute cultivation by means and division are shown in table 3.5(b). The table shows that the cost needs to prepare the lands for the sowing of seeds by different means such as country plough, power tiller and others. 'Others' means sometimes farmers prepare lands by spades. At national level per acre total cost of land preparation is Tk.1898 and it ranges from Tk.1785 in Barisal to Tk. 1923 in Rajshahi. 70% of total cost per acre is spent for mechanized tilling.

Table 3.5(c): Per acre seeds used, prices per Kg and per acre total cost for seeds.

Division	Per acre		
	Seeds used (in Kg.)	Prices per Kg. (in Tk.)	Per acre cost (in Tk.)
Dhaka	4.48	100	448
Rajshahi	4.02	125	502
Chittagong	3.62	105	380
Khulna	3.85	115	444
Barisal	3.08	110	339
Sylhet	3.51	105	370
Bangladesh	**4.31**	**105**	**452**

Per acre seeds used, prices per kg and per acre total cost for seeds are portrayed in table 3.5(c). It is observed from table that per acre average seed requirement for jute plantation across the country is 4.31 kg. which costs Tk.452 in total. Average price of per kg. seed is Tk.105. From the divisional figures, it appears that the highest quantity of seed (4.48 kg) is used in Dhaka division whereas the lowest (3.08 kg) in Barisal; and the highest total cost for seeds is Tk.502 in Rajshahi whereas the lowest Tk.339 in Barisal.

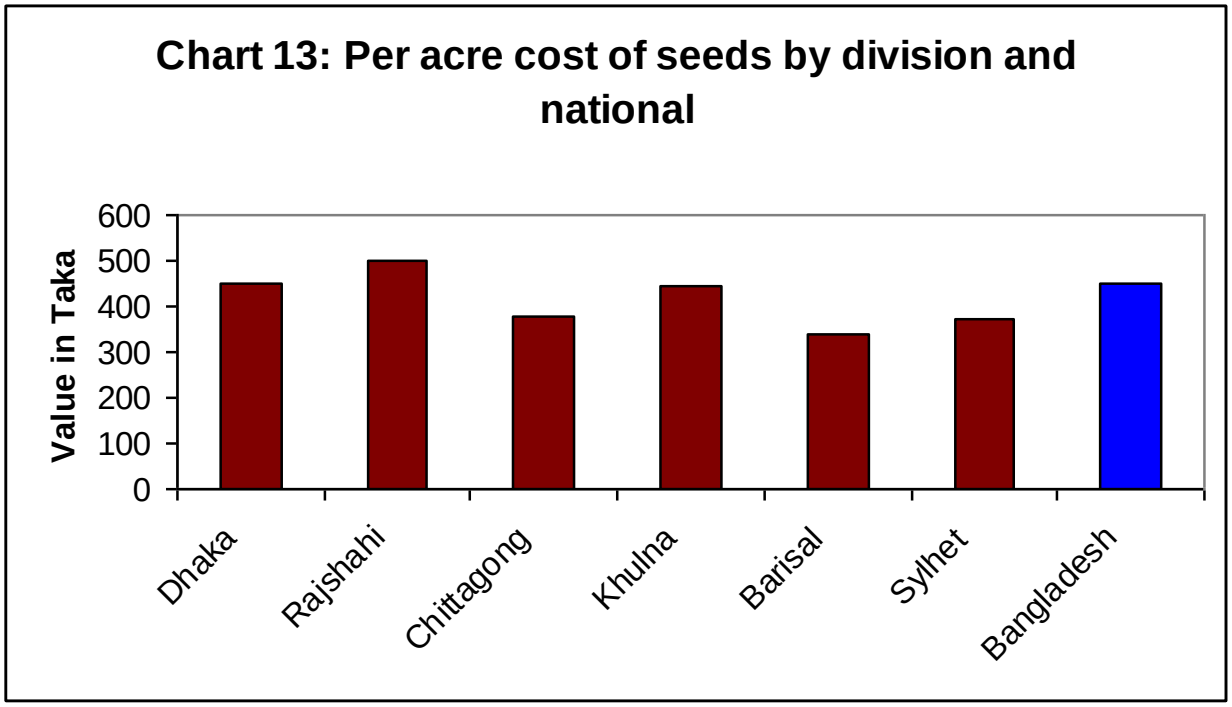


Table 3.5(d): Per acre quantity and cost of fertilizer by type.

Division	Per acre used (in Kg.)					Per acre cost (in Tk.)					Total
	Urea	TSP	MoP	DAP	Organic	Urea	TSP	MoP	DAP	Organic	
Dhaka	27	4	2	6	37	405	200	100	220	70	995
Rajshahi	24	5	3	8	27	312	210	114	272	84	992
Chittagong	36	5	5	5	33	540	241	242	193	58	1274
Khulna	28	11	5	7	29	420	350	250	280	58	1358
Barisal	36	5	-	6	58	432	245	-	240	90	1007
Sylhet	18	-	-	5	58	270	-	-	200	70	540
Bangladesh	**27**	**7**	**4**	**6**	**40**	**395**	**224**	**124**	**240**	**70**	**1053**

Per acre quantity and cost of fertilizer by type and division are exhibited in table 3.5(d). The table shows that among the fertilizers used except organic, urea alone hold lion's share of quantity and significant share of cost at both national and divisional level. Average total cost per acre across the country for fertilizer for production of jute is Tk.1053 in which the cost for urea is Tk.395, TSP Tk.224, MoP Tk.124, DAP Tk. 240 and for organic only Tk.70.

Analysing the figures by division, it is observed that per acre cost for urea is the highest (Tk.540) in Chittagong division, TSP (Tk.350), MoP (Tk.250) and DAP (Tk.280) in khulna division and Organic(Tk.90) in Barisal and per acre lowest cost for urea(Tk.270) in Sylhet, TSP (Tk.200) in Dhaka , MoP (Tk.100) in Dhaka, DAP Tk.193 in Chittagong and OrganicTk.58 in Chittagong and Khulna. Among the divisions, the highest cost in total is

incurred in Khulna (Tk.1358) and the lowest in Sylhet (Tk.540). Per acre total cost for fertilizer in Chittagong (Tk 1274) and Khulna (Tk 1358) is significantly higher in comparison to national figure and considerably lower in Sylhet (Tk 540) where TSP and MoP fertilizer is not used.

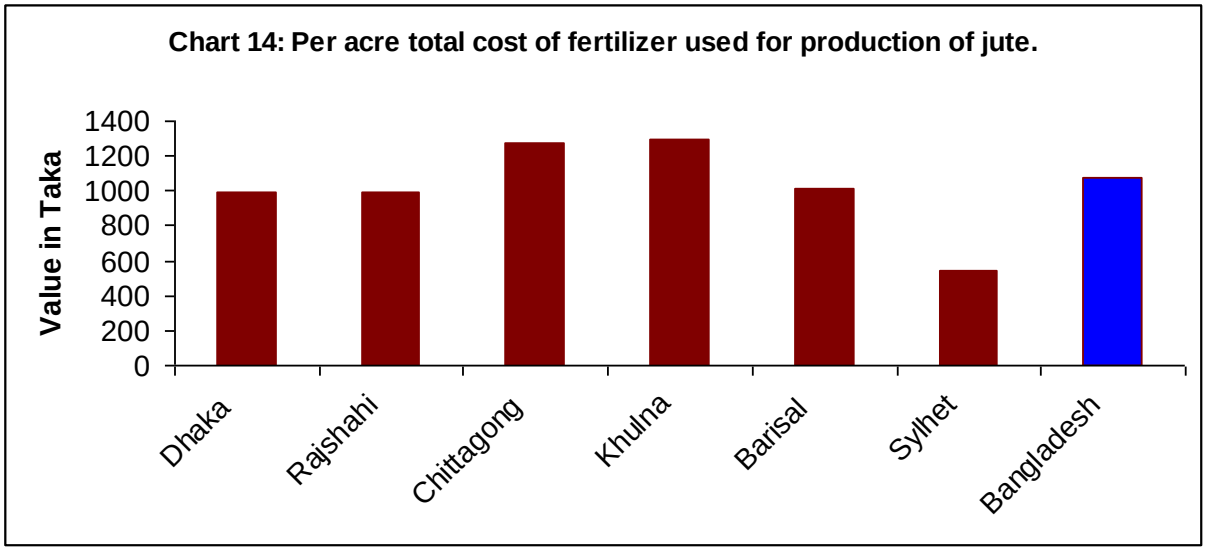


Table 3.5(e): Per acre cost of insecticides used for jute production.

Division	Per acre cost (Tk.)
Dhaka	127
Rajshahi	119
Chittagong	121
Khulna	129
Barisal	90
Sylhet	90
Bangladesh	**126**

Per acre cost of insecticides used for Jute production by division is shown in table 3.5(e). The table reveals that per acre cost of insecticides used for jute production at national level is Tk.126 which is not very significant compared to the costs incurred for many other factors of jute production mentioned earlier.

Among the division the highest amount of cost per acre (Tk.129) is incurred in Khulna division and the lowest (Tk.90) in two divisions Barisal and Sylhet as well. Per acre cost of insecticides in Dhaka and Khulna division is higher than that of national level and lower in other four divisions i.e Rajshahi, Chittagong, Barisal and Sylhet.

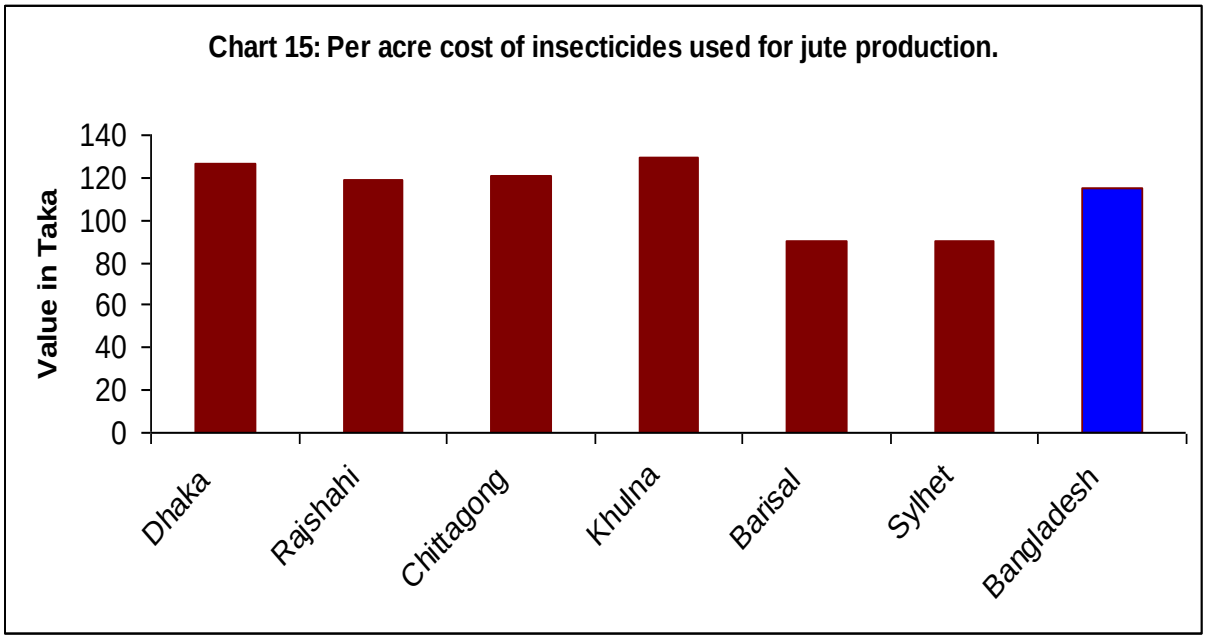


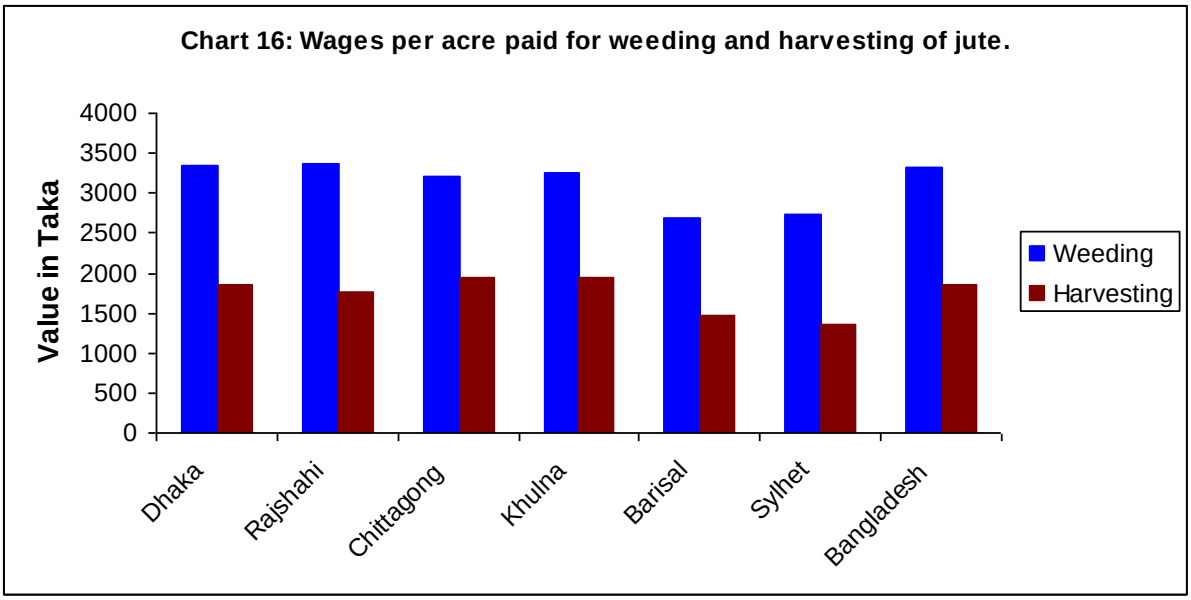
Table 3.5(f): Number of labourers employed and their wages for per acre land in Weeding and harvesting of jute by division.

Division	Weeding		Harvesting	
	Labour	Wages (in Tk.)	Labour	Wages (in Tk.)
Dhaka	22	3346	13	1844
Rajshahi	24	3365	13	1766
Chittagong	23	3214	14	1941
Khulna	22	3246	15	1941
Barisal	22	2686	12	1466
Sylhet	20	2725	11	1359
Bangladesh	**22**	**3331**	**13**	**1850**

Note: here wages = cost

Number of labourers employed and their wages for per acre land in Weeding and harvesting of jute by division are presented in table 3.5(f). The table gives the picture of cost

per acre for weeding and harvesting both at national and divisional level. It is observed that the labour cost for weeding at national level is Tk.3331 and Tk.1850 for harvesting. By division, it is observed that per acre labour cost for weeding is the highest Tk.3365 in Rajshahi division and the lowest Tk.2686 in Barisal; and the highest per acre labour cost for harvesting Tk.1941 in two divisions Chittagong and Khulna and the lowest Tk.1359 in Sylhet. In comparison to national figure, higher cost for weeding has been recorded at four districts Dhaka Tk.3346, Rajshahi Tk.3365, Chittagong Tk.3214 and Khulna Tk.3246 and the lower in two divisions- Barisal Tk.2686 and Sylhet Tk.2725; and higher cost for harvesting in two divisions, Chittagong Tk.1941 and Khulna Tk.1941 and lower in all other divisions. It is noteworthy that cost variation in both weeding and harvesting among the four divisions Dhaka, Rajshahi, Chittagong and Khulna and national as well is very nominal, but it is considerably lower in two divisions- Barisal and Sylhet.



The differences in cost for weeding and harvesting among the divisions and Bangladesh are sharply identified from chart 16. Barisal and Sylhet are showing the lower bar for both weeding and harvesting while Dhaka, Rajshahi, Chittagong, Khulna and Bangladesh as well are showing almost equal for both cases.

Per acre number of labourers employed in retting, peeling and drying of jute and their wages(in Tk.) are presented in Table 15. The table depicts the costs per acre incurred in different phases of production of jute. Data of this table show that across the country on an average, farmer's cost is Tk.712 for retting, Tk.1627 for peeling and Tk.594 for drying. Of the three, the highest expenditure is incurred for peeling (Tk.1627) and the lowest for drying (Tk.594).

Table 3.5(g): Per acre number of labourers employed in retting, peeling and drying of jute and their Wages (in Tk.).

Division	Retting		Peeling		Drying	
	Labour	Wages	Labour	Wages	Labour	Wages
Dhaka	4	700	12	1680	5	600
Rajshahi	5	800	12	1560	6	688
Chittagong	5	750	12	1800	5	650
Khulna	5	700	11	1430	5	500
Barisal	5	650	11	1430	4	400
Sylhet	5	560	11	1540	4	480
Bangladesh	**5**	**712**	**12**	**1627**	**5**	**594**

Note: here wages = cost

It is observed from the data presented by division that in case of retting, the highest cost Tk.800 is incurred in Rajshahi division and the lowest Tk.560 in Sylhet; for peeling the highest Tk.1800 in Chittagong and the lowest Tk.1430 in Barisal division; for drying the highest Tk.688 in Rajshahi and the lowest Tk.400 in Barisal. Comparing to nation figure, it is found that in three divisions Dhaka Rajshahi and Chittagong division show the higher cost for retting respectively Tk.700, Tk.800 and Tk.750. The lower in other two divisions- Barisal Tk.650 and Sylhet Tk 560; and higher cost for peeling at two divisions- Chittagong Tk 1800 and Dhaka Tk1680 and lower at four other divisions- Rajshahi Tk 1560, Khulna and Barisal Tk 1430 and Sylhet Tk.1540; and higher cost for drying at three divisions Dhaka Tk.600, Rajshahi Tk688 and Chittagong Tk 650 and lower at three other divisions- Khulna Tk 500, Barisal Tk 400 and Sylhet Tk 480.

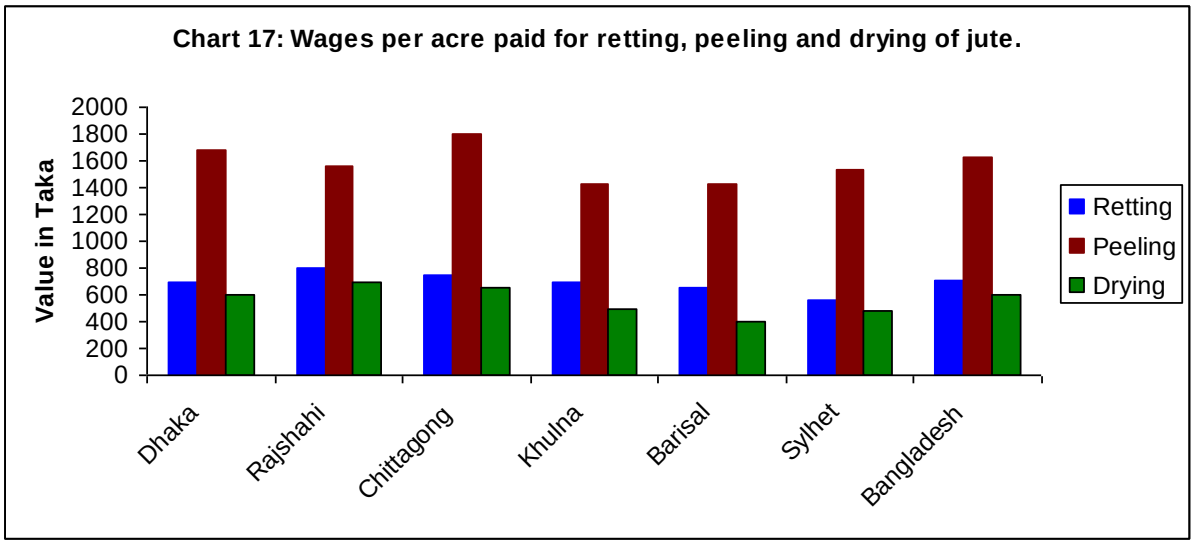


Table 3.5(h): Leasing cost per acre for jute cultivation.

Division	**Leasing cost per acre (in taka)**
Dhaka	3831
Rajshahi	3826
Chittagong	3933
Khulna	3835
Barisal	2903
Sylhet	3105
Bangladesh	3832

Leasing cost per acre for jute cultivation by division is placed in table 3.5(h). Leasing means the land which is taken by the farmer for jute cultivation only on payment of money to the land owner. Leasing cost per acre is found to be Tk. 3832 at national level. The highest rate of Tk. 3993 is in Chittagong and the lowest of Tk. 2903 in Barisal. Existing leasing rate per acre is included in case of 'own lands' also for the calculation of cost of production.

Table 3.5(i): Productivity of Jute per acre by division.

Division	Total production cost per acre (Tk.)	Total farmgate price per acre(Tk.)			Productivity
		Jute	Stalk	Total	
Dhaka	15483	19566	3590	23156	1.50
Rajshahi	15541	18482	5761	24243	1.56
Chittagong	15885	16315	3792	20107	1.27
Khulna	15406	18776	4462	23238	1.51
Barisal	12756	15177	4792	19969	1.56
Sylhet	12586	13704	4967	18671	1.48
Bangladesh	15475	17952	4641	22593	1.46

Table 3.5(i) presents the data on the productivity by division and nation level as well. It is the most significant component of production because it determines whether producers

will continue the production of the respective goods. If it is greater than one it means that producer becomes benefited and he will be interested to continue the production of those goods; and if it is less than one it means that producer gets loss and he will quit the production of those goods. It is evident from the table that productivity of jute at national level is greater than one- 1.46, which means that farmers get some benefits from the production of jute.

Among the divisions, it is found that Rajshahi and Barisal resumes the highest productivity 1.56 which is also higher than national figure 1.46; and the lowest productivity 1.27 is recorded at Chittagong, which is significantly lower than national figure. In comparison to national figure, productivity is higher at four divisions- Dhaka, Rajshahi, Khulna and Barisal.

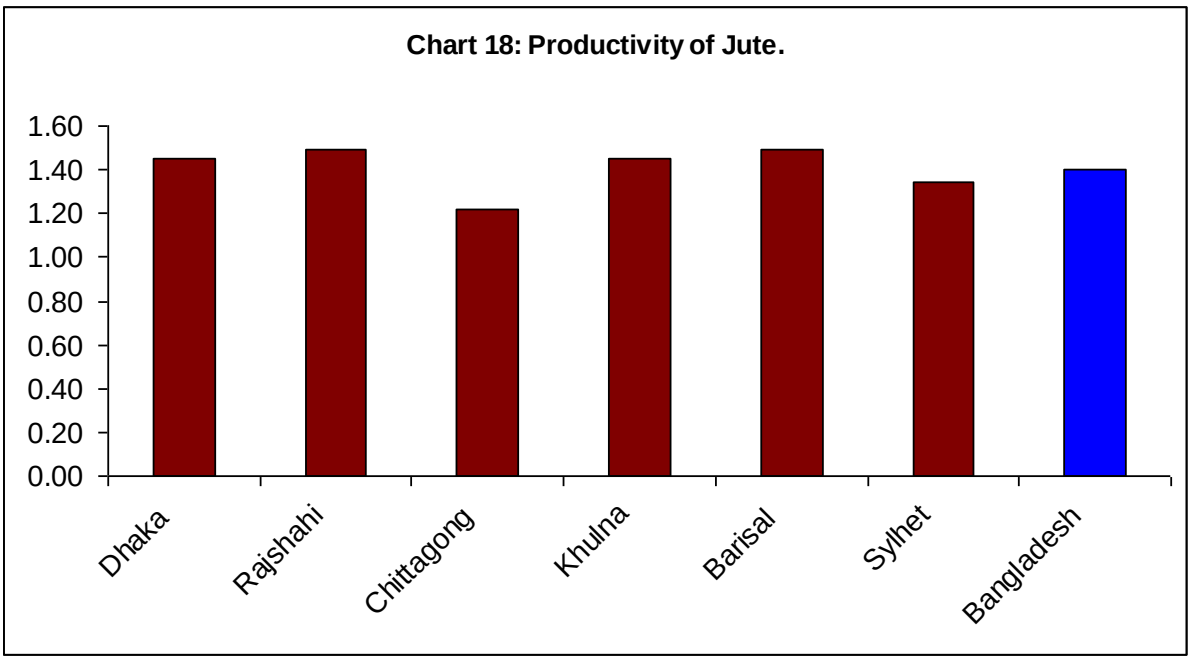
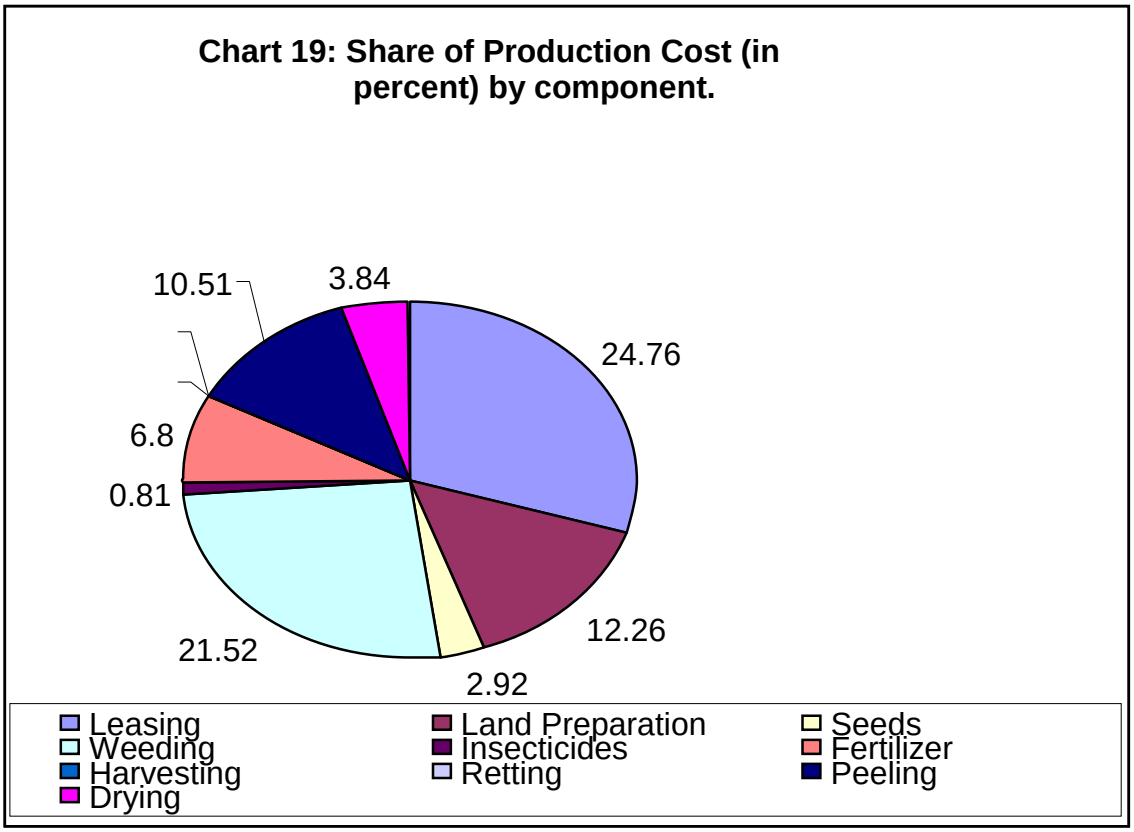


Table 3.5(j): Per acre total production cost (in taka) of jute by components for the year 2008-09.

Division	Leasing	Land Preparation	Seeds	Weeding	Insecti -cides	Fertilizer	Harves -ting	Retting	Peeling	Drying	Total
Dhaka	3831	1912	448	3346	127	995	1844	700	1680	600	15483
Rajshahi	3826	1923	502	3365	119	992	1766	800	1560	688	15541
Chittagong	3933	1822	380	3214	121	1274	1941	750	1800	650	15885
Khulna	3835	1823	444	3246	129	1358	1941	700	1430	500	15406
Barisal	2903	1785	339	2686	90	1007	1466	650	1430	400	12756
Sylhet	3105	1817	370	2725	90	540	1359	560	1540	480	12586
Bangladesh	3832	1898	452	3331	126	1053	1850	712	1627	594	15475
Percentage (%)	24.76	12.26	2.92	21.52	0.81	6.80	11.95	4.60	10.51	3.84	100

Per acre production cost (in Tk.)by component is presented in table 3.5(j). Out of total cost, 24.76% is spent for leasing followed by weeding 21.52%; share of harvesting cost is 11.95% and peeling cost 10.51%. Weeding, harvestting, retting, peeling and drying works are done by labourers and expenses under these components are practically labourer's wages. Of the total cost, labourer's wages represent 52.42%. component-wise costs of production per acre in percentage are shown in the pi-chart no 19:



It is evident from chart 19 that out of the total cost 24.76% is spent for leasing which is the highest and only 0.81% is spent for insecticides which is the lowest.

Chapter 4

Statistical Table

Statistical Table

Table 4.1 : Total number of labourers engaged in production of Jute for the year 2008-09 by different components.

Division	Weeding	Harvesting	Retting	Peeling	Drying	Total
Dhaka	89513	52894	16275	48825	20343	235987
Rajshahi	18567	10057	3868	9283	4642	48351
Chittagong	997	607	217	520	217	2645
Khulna	19503	13297	4432	9751	4432	53188
Barisal	76	42	17	38	14	192
Sylhet	151	83	38	83	38	404
Bangladesh	128807	76980	24847	68500	29686	340767

Table 4.2 : Total seeds used (in Kg.), and total cost (in Tk.)

Division	Total	
	Seeds used (in Kg.)	Cost (in Tk.)
Dhaka	18228	1822805
Rajshahi	2664	332967
Chittagong	157	16481
Khulna	3413	392498
Barisal	11	1176
Sylhet	26	2775
Bangladesh	24499	2568702

Table 4.3 : Total cost of insecticides (in Tk.).

Division	Total cost (Tk.)
Dhaka	516763
Rajshahi	92106
Chittagong	5246
Khulna	114358
Barisal	312
Sylhet	678
Bangladesh	6650726

Table 4.4 : Total number of labourers employed in Weeding and Wages (in Tk.).

Division	Total	
	Labour	Wages
Dhaka	89513	14240703
Rajshahi	18567	2723160
Chittagong	997	145735
Khulna	19503	3009667
Barisal	76	9707
Sylhet	151	21517
Bangladesh	128807	19263929

Table 4.5 : Total number of labourers employed in Harvesting and Wages(in Tk.).

Division	Total	
	Labour	Wages
Dhaka	52894	7730661
Rajshahi	10057	1407980
Chittagong	607	86714
Khulna	13297	1772933
Barisal	42	5285
Sylhet	83	10564
Bangladesh	76980	1069876

Table 4.6: Total number of labourers employed in retting and Wages(in Tk.).

Division	Total	
	Labour	Wages
Dhaka	16275	2848125
Rajshahi	3868	618880
Chittagong	217	32550
Khulna	4432	620480
Barisal	17	2210
Sylhet	38	4256
Bangladesh	24847	3528274

Table 4.7 : Total number of labourers employed in peeling and Wages(in Tk.).

Division	Total	
	Labour	Wages
Dhaka	48825	7323750
Rajshahi	9283	1376978
Chittagong	520	73667
Khulna	9751	1365140
Barisal	38	4940
Sylhet	83	10865
Bangladesh	68500	10155340

Table 4.8 : Total number of labourers employed in drying and Wages(in Tk.).

Division	Total	
	Labour	Wages
Dhaka	20343	2441160
Rajshahi	4642	532283
Chittagong	217	28210
Khulna	4432	443200
Barisal	14	1400
Sylhet	38	3600
Bangladesh	29686	3335136

Table 4.9: Total leasing cost (in Tk.) for jute cultivation,

Division	Total leasing cost(Tk)
Dhaka	15591488
Rajshahi	2535184
Chittagong	170535
Khulna	3399728
Barisal	10073
Sylhet	23381
Bangladesh	21730389

Table 4.10: Total area under jute, Total production (in maund) of jute fibre and stalk (as per survey area)

Division	Total area (in acres)	Total Production (in maund)	
		Fibre	Stalk
Dhaka	4068.76	83463	104323
Rajshahi	662.62	13458	16817
Chittagong	43.36	817	1021
Khulna	886.50	17781	22225
Barisal	3.47	69	87
Sylhet	7.53	129	173
Bangladesh	5672.24	115717	144642

Table 4.11: Total Fertilizer used by type (in Kg) and Total Cost (in Tk).

Division	Total Fertilizer used (in kg)					Total Cost (in Tk)					Total
	Urea	TSP	MoP	DAP	Organic	Urea	TSP	MoP	DAP	Organic	
Dhaka	109856	16275	8138	24413	150544	1647848	813752	406876	895127	284813	4048416
Rajshahi	15903	3313	1988	5301	17891	206737	139150	75539	180233	55660	657319
Chittagong	1561	217	217	217	1431	23414	10450	10493	8368	2515	55241
Khulna	24822	9752	4432	6205	25709	372330	310275	221625	248220	51417	1203867
Barisal	125	17	-	21	201	1499	850	-	833	312	3494
Sylhet	136	-	-	38	437	2033	-	-	1506	527	4066
Bangladesh	152403	29574	14775	36195	196213	2240535	1270582	703358	1361338	397057	5972870

Annexure

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 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 be varied from place to place. It might be one third (1/3) or half (1/2) or two-third (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 jute has been cultivated during survey year.

Capsularis Jute:

The jute which is sown during the month of March and April and harvested during the month of July and August is said to be Capsularis. It grows relatively in low land.

Olitorius Jute:

The jute which is sown during the month of April and May and harvested during the month of August and September is said to be Olitorius.

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

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 & pesticide related/ fertilizer/weeding, harvesting & retting/peeling & drying

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

K = the number of random group

Table-1: Estimated average production cost (in Tk.)per kg and per decimal(excluding leasing)for the 2008-09 Jute crop and their standard errors

Phase	Per kg		Per decimal	
	Cost	Standard Error	Cost	Standard Error
Land preparation	2.33	0.0054723	18.98	0.2142965
Seed & pesticide related	0.71	0.0117579	5.78	0.0724492
Fertilizer	1.29	0.0248981	10.53	0.3121137
Weeding, harvesting & retting	7.22	0.0435785	58.93	0.7618795
Peeling & drying	2.72	0.0247274	22.21	0.1774476
Total	14.27	0.0249305	116.43	0.8048667

The standard errors of five type of estimated average production cost per kg were lower than for five type of estimated average production cost per decimal; but all the estimated costs have acceptable reliability in terms of sampling error.

Annexure- D

Questionnaire

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

বাংলাদেশ পরিসংখ্যান ব্যুরো

কৃষি দাগগুচ্ছ হালনাগাদকরণ ও সম্প্রসারণ এবং উৎপাদন খরচ জরিপ প্রকল্প

পরিসংখ্যান ভবন

ই-২৭/এ, আগারগাঁও, ঢাকা-১২০৭।

পাট উৎপাদন ব্যয় জরিপ, ২০০৮

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। পাটের প্রকার ভেদে জমির খন্ডের পরিমাণ, মালিকানা, চাষের ধরন এবং খরচ (টাকা)

খন্ড	পাটের 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 (খরচ)		যান্ত্রিক (খরচ)		অন্যান্য খরচ (টাকা)	মোট (টাকা)
					নিজস্ব (টাকা)	ভাড়া (টাকা)	নিজস্ব (টাকা)	ভাড়া (টাকা)		
১	**২**	**৩**	**৪**	**৫**	**৬**	**৭**	**৮**	**৯**	**১০**	**১১**
১ম										
২য়										
৩য়										
৪র্থ										
৫ম										
৬ষ্ঠ										

পাটের প্রকারের কোড ঃ দেশী/সাদা-১, তোষা/বগী-২ মালিকানা কোড ঃ নিজস্ব-১, বর্গা-২, বন্ধক-৩, লীজ-৪ এবং অন্যান্য-৫

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

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

(পারিবারিক কর্মী হলে মজুরী বাজার দরে লিখতে হবে)

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

খন্ড	ইউরিয়া		টিএসপি		পটাশ (এমওপি)		জিঙ্ক		ড্যাপ(DAP)		গোবর/জৈব		অন্যান্য মূল্য	মোট (টাকা)
	পরিমাণ	মূল্য	পরিমাণ	মূল্য	পরিমাণ	মূল্য	পরিমাণ	মূল্য	পরিমাণ	মূল্য	পরিমাণ	মূল্য		
১	**২**	**৩**	**৪**	**৫**	**৬**	**৭**	**৮**	**৯**	**১০**	**১১**	**১২**	**১৩**	**১৪**	**১৫**
১ম														
২য়														
৩য়														
৪র্থ														
৫ম														
৬ষ্ঠ														

৪। **নিড়ানি, কর্তন, জাগ দেয়া শ্রমিকের সংখ্যা ও খরচ (টাকা)**

খন্ড	**নিড়ানি**			**কর্তন**			**জাগ দেয়া**			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											
৬ষ্ঠ											
৭ম											

(পারিবারিক কর্মী হলে মজুরী বাজার দরে লিখতে হবে)

৫। **আঁশ ছাড়ানো ও শুকানো শ্রমিকের সংখ্যা এবং খরচ (টাকা)**

খন্ড	**আঁশ ছাড়ানো**			**শুকানো**			অন্যান্য খরচ (টাকা)	মোট খরচ (টাকা)
	শ্রমিকের সংখ্যা		খরচ (টাকা)	শ্রমিকের সংখ্যা		খরচ (টাকা)		
	পারিবারিক	ভাড়া		**পারিবারিক**	ভাড়া			
১	**২**	**৩**	**৪**	**৫**	**৬**	**৭**	**৮**	**৯**
১ম								
২য়								
৩য়								
৪র্থ								
৫ম								
৬ষ্ঠ								

(পারিবারিক কর্মী হলে মজুরী বাজার দরে লিখতে হবে)

৬। **উৎপাদিত পাট (মণ) এবং পাট খড়ির পরিমাণ (মণ) ও মূল্য (টাকা)**

খন্ড	পাট		পাট খড়ি		মোট উৎপাদিত দ্রব্যের মূল্য (টাকা)
	পরিমাণ (মণ)	মূল্য (টাকা)	পরিমাণ (মণ)	মূল্য (টাকা)	
১	২	৩	৪	৫	৬
১ম					
২য়					
৩য়					
৪র্থ					
৫ম					
৬ষ্ঠ					

(১ মণ=৪০ কেজি)

৭। পাট মৌসুমে পাট চাষের জন্য এক একর জমি লীজ নিতে কত টাকা মালিককে দিতে হয় ঃ ------

তথ্য সংগ্রহকারীর নাম ----------

পদবী ----------

তারিখ ----------

সুপারভাইজারের নাম ----------

পদবী ----------

তারিখ ----------

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