Report on The Productivity Survey of Chilli Crop

2014

Productivity Assessment Survey of Different Agricultural Crops Programme

BANGLADESH BUREAU OF STATISTICS
Statistics and Informatics Division
Ministry of Planning

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May, 2015

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BANGLADESH BUREAU OF STATISTICS (BBS)
Statistics and Informatics Division (SID)
Ministry of Planning

Secretary
Statistics and Informatics Division (SID)
Ministry of Planning

Foreword

Agriculture plays a pivotal role in the economy of Bangladesh. This sector alone contributes 16.33% of annual GDP of the country. On the other hand, it offers both the opportunities of employment and livelihood to a large extent. It is worthy to mention that the country has a strong agriculture structure to maintain a sustainable development of the agriculture production of major and minor crops. As such the country enjoys the food security, sometimes with a buffer stock of major crops. Farmers of Bangladesh simultaneously produce various minor crops which also fulfill the demand of internal consumption of bulk population. In persuasion of the demand of statistics on production, cost of production and market price of various crops, Bangladesh Bureau of Statistics (BBS), apart from major crops, has also been putting efforts in conducting surveys on a series of minor crops.

Chilli is an important spice in Bangladesh for its widely uses in cooking as well as nutritional value. This chilli report is the sixth of its series among other nine different crops. It has traditional value in Bengali culture for its hot taste. Chilli is a valuable spice and also one of the most important cash crops grown in almost all districts in Bangladesh. Its production offers suitable options for consumption and income generation. I believe that the data presented in the report would be useful for the policy formulation and planning process of the development initiatives.

I would like to take this opportunity to extend my thanks to the Director General, BBS and his colleagues who were involved in different stages of the survey and finalizing the report. I believe that the policy makers, researchers, consumers and all other stakeholders will find this report very useful.

Dhaka
May, 2015

Kaniz Fatema *ndc*
Secretary

Director General(AC)
Bangladesh Bureau of Statistics (BBS)

Preface

Bangladesh is predominantly an agriculture country. Agriculture being the engine of growth of the economy, there is no other alternative but to develop agriculture sector for alleviation of poverty. Since provision of food security, improvement of the living standard and generation of employment opportunity of our population are directly linked to the development of agriculture, there have been continued efforts by the government for the overall development of this sector.

Production of crops, cost of production of crops and market price of both major and minor crops are directly interrelated. Government has to give proper attention on these three factors so that the farmer get fair price of the crops produced during the harvest time.

In order to formulate proper policy and planning for the development of agriculture sector reliable and realistic data regarding production cost of crops in different phases such as cost relating to land preparation, seeds, weeding, insecticides, fertilizers, harvesting, transportation, leasing of land etc. are needed. Keeping these in view, the Productivity Assessment Survey of different Agricultural Crops (PASDAC) Program under the Bangladesh Bureau of Statistics has conducted survey on nine minor crops to obtain cost of production of each individual crop by following the scientific survey methods. This report contains the findings of the survey on Chilli conducted during March-April 2014.

I express my sincere gratitude to the members of the Technical Committee and the Working Committee of the PASDAC Program for providing technical guidance for choosing spices crops for study, sample design, finalizing questionnaire and other related matters. I would like to convey thanks to Mr. Md. Nurul Islam, Joint Secretary (Rtd), Local consultant, Ms. Salima Sultana, Director(Joint Secretary), Agriculture wing, BBS and Mr. Md. Akhter Hassan Khan, Programme Director of this study and other officers/staff who worked hard in bringing out this report in time.

Any comments or constructive suggestions for improvement of such report in future will be appreciated.

Dhaka
May, 2015

Md. Baitul Amin Bhuiyan
(Additional Secretary)

Acknowledgement

Now-a-days agriculture production statistics and cost of production statistics of different crops have wide demand among the users. This statistics provide necessary information to development planners & Policy makers. It also helps business community with market related information. The report on “The Productivity Survey of Chilli Crop-2014” will be of great informative publication relating to minor crops production and cost of production.

I would like to express my gratitude to the honorable Secretary, Statistics and Informatics Division for his valuable guidance and directions provided during the survey Programme. I would also remain grateful to Mr. Md. Baitul Amin Bhuiyan (Additional Secretary), Director General (Additional Charge) BBS for his continued suggestions and support to me in doing all the things during the survey and for preparing the report. I would like to extend my gratitude to Dr. Kazi Mostafa Sarwar, Joint Secretary (Admin), Statistics and Informatics Division (SID) for his continuous follow-up implementation of the activities of the programme.

I would like to appreciate Mr. Md. Nurul Islam, Joint Secretary (Rtd) for developing the methodology of the survey as well as the report and also thanks to Ms Salima Sultana, Director (Joint Secretary) of Agriculture Wing, BBS for her valuable guidance and support that helped to conduct the survey. My thanks also go to Mr Md. Rezaul Karim, Assistant Statistical Officer for his works in data processing.I acknowledge the valuable suggestions and hard work of officials and staff of Agriculture Wing.

I am also grateful to the respondents who extended their cooperation for filling questionnaire and spending their valuable time in spite of their busy occupations. My sincere thanks to the field officials and staff involved in the survey.

Finally I acknowledge the work of the officers and staff who were involved in typing questionnaire, manuals and this report.

Dhaka
May, 2015

Md. Akhter Hassan Khan
Programme Director

Contents

Key Findings

SL. No.	Items	Result
(1)	(2)	(3)
1	Area(in acre) under chilli (chilli farm holding)	434757
2	Percentage of area growing chilli by tenancy	
	a. Own	76.11
	b. Share Crop	7.65
	c. Mortgage	5.26
	d. Lease	9.48
	e. Others	1.49
3	Percentage of area growing chilli by division	
	a. Barisal	7.26
	b. Chittagong	19.48
	c. Dhaka	25.87
	d. Khulna	9.75
	e. Rajshahi	17.80
	f. Rangpur	17.78
	g. Sylhet	2.06
4	Percentage of area growing chilli by varieties	
	a. Local	79.09
	b. Hybrid	16.77
	c. Others	4.14
5	Percentage of area growing chilli by cultivation type	
	a. Single	81.18
	b. Mixed	18.82
6	Number of labourers employed by component for per acre production of chilli	
	a. Planting	21
	b. Weeding.	27
	c. Harvesting	73
	Total	121
7	Per acre leasing value (Tk.)	8879
8	Per acre production cost (Tk.) by varieties	
	a. Local	43714
	b. Hybrid	51963
	c. Others	46468
	Average	45242
9	Per acre production cost (Tk.) by division	
	a. Barisal	31553
	b. Chittagong	47878
	c. Dhaka	45424

SL. No.	Items	Result
(1)	(2)	(3)
	d. Khulna	49449
	e. Rajshahi	49205
	f. Rangpur	41811
	g. Sylhet	41673
10	Per acre production cost (Tk.) by type of input	
	a. Land preparation	4111
	b. Seed/seedling and plantation	7024
	c. Weeding	5175
	d. Irrigation	3556
	e. Pesticide/insecticide	3398
	f. Fertilizer	9251
	g. Harmon	728
	h. Harvesting	9541
	i. Transport	1765
	j. Others	693
	Total	45242
11	Per acre yield rate (Kg.) by division (Dry)(4 kg green=1kg dry)	
	a. Barisal	581.5
	b. Chittagong	840.5
	c. Dhaka	812.5
	d. Khulna	1114.8
	e. Rajshahi	1057.8
	f. Rangpur	920.5
	g. Sylhet	672.8
	Bangladesh	891.0
12	Per acre production value (Tk.) by division	
	a. Barisal	68340
	b. Chittagong	107887
	c. Dhaka	97763
	d. Khulna	104072
	e. Rajshahi	106479
	f. Rangpur	93485
	g. Sylhet	100334
	Bangladesh	99059
13	Per acre yield rate (Kg) by varieties (Dry) (4kg green =1kg dry)	
	a. Local	841
	b. Hybrid	1132
	c. Others	874
	Average	891
14	Per acre production value (Tk.) by varieties	
	a. Local	94562
	b. Hybrid	120430
	c. Others	98354
	Average	99059

SL. No.	Items	Result
(1)	(2)	(3)
15	Per acre benefit cost ratio by varieties	
	a. Local	2.16
	b. Hybrid	2.32
	c. Others	2.12
	Average	2.19
16	Per acre benefit cost ratio by division	
	a. Barisal	2.17
	b. Chittagong	2.25
	c. Dhaka	2.15
	d. Khulna	2.10
	e. Rajshahi	2.16
	f. Rangpur	2.24
	g. Sylhet	2.41
	Bangladesh	2.19

Chapter-1

Introduction

Introduction

Bangladesh is an agricultural country and most of the 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. At the beginning of industrialization the activities of the population got diversification towards different sectors. As a result, the contribution of the agriculture sector is slowly reducing and now reached 16.33% share of GDP (BBS). Still agriculture plays vital role and is taken 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. Chilli is a valuable spice and also one of the most important cash crops grown in Bangladesh. It is available and used in the form of green, dried and powdered. It has become an essential ingredient in Bangladeshi meals. Most of our households always keep a stack of fresh hot green chillies at hand, and use them to flavor most curries and dry dishes. It is typically lightly fried with oil in the initial stages of preparation of the dish.

It has diversified uses. The peoples of Bangladesh are usually used chillies in all curry preparation like meat, fish, vegetables, pulses etc. for its typical color, taste and flavor. Red chillies contain large amounts of vitamin-C and small amounts of carotene (provitamin-A). Green chillies (unripe fruit) contain a considerably lower amount of both substances. In addition, peppers are a good source of most vitamin-B and vitamin-B_6 in particular. They are very high in potassium, magnesium and iron.

Part of the capsicum family, chillies come in scores of varieties and colours (from green through to yellow, orange and red) and are one of the most popular spices in the world. The level of heat of chilli varies from type to type, from sweet and mellow to blisteringly hot as a general rule, the smaller the chilli, the hotter the taste. But it's not all about heat - each type has its own distinct flavor.

Chilli is the most essential and important spices crops in Bangladesh. The production of chilli largely depends on the use of fertilizers, irrigation, pesticide etc. The Government of Bangladesh has, therefore, provided priority to the agriculture sector to increase the production of chilli by giving subsidy to the farmers on different inputs such as seeds, fertilizer, irrigation etc. to achieve self-sufficiency in chilli production.

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 calamities like draught, flood, cyclone, tornado etc. are a very regular phenomenon which hinders the production of agriculture to a great extent. Cultivable land is being decreased due to the pressure of massive population. As a result, food security is being threatened and the risk of poor people is being increased.

Bangladesh government is remarkably concerned about this agriculture sector. Notable portion of annual budget has consistently been allocated for the last couple of years for the development of the sector. Government has also been launching many programmes one after another in order to boost up the agriculture production.

Production of crops, cost of production of crops and market price of crops are directly interrelated. Government has to give proper attention on these three factors as stated so that the farmer get fair price of the crop produced during the harvest time. Generally, government has to declare procurement price at the harvesting time of the crop so that producer get proper price. Procurement price of the crop has to be fixed considering all these matters. If procurement price is lower than the production cost, producers get looser and discouraged to produce more crops and if procurement price is higher than the production cost, producers get profit and encouragement. This type of loss and profit influence positively or negatively on the cultivation of next year's crops. So, an objective survey is necessary to know the cost of production of crops at farmer's level. And as such the 'Productivity Assessment Survey of different Agricultural Crops (PASDAC) Program' of BBS has been given the responsibility of conducting a survey on the yield and cost of production of chilli crop.

1.1 Production of Chilli

The chilli is a plant of tropical and sub-tropical region. It grows well in warm and humid climate. Deep, loamy, fertile soils rich in organic matter are preferred by the crop for satisfactory growth. Also need well drained soils with adequate soil moisture for the growth of the crop. chilli grows well in the dry and the intermediate part of the country.

Chilli plants should be in a position that receives a good amount of light. Chillies should not be in a position where the nightly temperature falls below 12°C. Growth will be inhibited if temperatures fall below 15°C. Chilli pepper plants is a type of seasonal crops (annual plant) which only live for one season then died. If cultivated this plant can grow and produce for several months after planting after which it will die.

Chillies plants should be watered regularly to avoid 'flooding' them at wide intervals. Overwatering on a regular basis will cause the roots to root. When flowers developing on the plants, leave them on and they will die after a few weeks and chillies will form. Once the plants are producing fruits, required amount of organic liquid fertilizer every few weeks should be applied which are necessary for the plants fruiting heavily.

Chilli peppers are harvested when the peppers are either green or red. Red peppers are hotter than green peppers. If anyone wants to harvest green chilli peppers, allow them to grow as large as possible. Harvesting of chillies should be done when they start to turn red. Clip the peppers from the plant by cutting the stems where they connect to the main branch.

The chillies farmers of Bangladesh cultivate local cultivars which produce very low yields. The main reasons of low yield are lacking of high yielding varieties and limited availability of irrigation facilities. Though the area and production have been raised but per unit yield of Chilli is very low. In Bangladesh, chillies are grown in all the districts

but plenty of chillies are produced in the district of Bogra, Rangpur, Kurigram, Jamalpur, Natore and Jessore.

Farmers of Bangladesh are growing chillies following indigenous methods with the poor yield rate. The reasons behind such low yield due to lack of high yielding variety and method of production practices followed by the local growers. The yield of chilli can be increased by adopting improve production technology like proper plant spacing. Although chilli is a major spice crop of Bangladesh, but its production technologies has not been standardized from the scientific and economic point of view. Therefore, research needs to bring improvement in production technologies as well as considering economic return. If nature favors, farmers get moderately good harvest.

1.2 Scope and coverage of the survey

The productivity survey of chilli crop 2014 is a household based survey. Under the purview of this survey the target population was having at least one decimal area of land under chilli cultivation of all dwelling households. The survey covers the whole country. A total of 210 PSUs were taken from seven divisions. Each division 30 PSUs were selected on the basis of systematic random sampling. It covered seven divisions such as Barisal, Chittagong, Dhaka, Khulna, Rajshahi, Rangpur and Sylhet.

1.3 Objectives of the Survey

The chilli Survey-2014 is designed to provide national estimates for various indicators those are needed for national accounts and policy purposes.

The objectives of the survey are to estimate

(a) Per acre production cost
(b) Per acre yield rate
(c) Per acre production value and
(d) The total area under chilli cultivation

Chapter-2

Methodology

Methodology

2.1 Sample Design

The chilli survey has been conducted in the whole country using the frame of Agriculture Census-2008. In this survey, household having at least one decimal area of land under chilli crop cultivation has been considered as ultimate sampling unit. For the better estimate, the whole country has been divided into seven divisions. Each division treated as a stratum. A two stage cluster sampling design has been adopted in this survey. In the first stage, a total of 30 PSU has been selected in each division using the systematic random sampling, i.e. a total of 210 PSUs has been selected in the whole country. In the second stage, all the households were listed with some basic characteristics from the selected PSUs and then 30 households were selected following the systematic random sampling, where a mouza was treated as the primary sampling unit (PSU) and the selected chilli crop producing households were the ultimate sampling unit. From the selected mouzas possesses less than 25 chilli producing farm households and then the remaining households were taken from the adjacent mouza or mouzas.

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 a survey. Considering its importance, the following measures were taken during the preparation of questionnaire as the tool of data collection:

- Questionnaire Design;
- Questionnaire has been pre-tested;
- Comprehensive manual of data collection with clearly defined concepts and definitions have been made;
- Training programmes for the enumerators and supervisors have been conducted;
- Required number of field survey staff were set up in order to ensure smooth data collection;
- Extra-care was taken for the data collection activity, sufficient number of supervisors were assigned.

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 were addressed to the extent possible for developing the questionnaire of survey.

2.2.2 Process of questionnaire design:

A working committee comprising of all the Directors of Bangladesh Bureau of Statistics (BBS), headed by the Deputy Director General was formed in order to facilitate the questionnaire development activity. Programme Director and some other members of the working committee had paid several visits to the field with a view to be knowledgeable about the factors of production and the pros and cons of the whole process of the production of chilli. They discussed the matter with the farmers who grow chilli. After having the knowledge on the issue, they provided feedback to the meeting of the working committee. Working committee has thoroughly examined the feedback and selected the topics of the survey. Programmme Director was assigned to form a questionnaire on the selected topics and eventually, he developed a questionnaire with eleven questions. Subsequently, the questionnaire was brought forward to the Technical Committee, the highest statistical body comprising of representatives from different Ministries, Universities and BBS, which had finally approved the questionnaire.

2.2.3 Pre-testing the questionnaire:

The questionnaire was pre-tested to examine the time necessary to complete the interview, test the reliability i.e. whether it captured the information desired, and also investigated the consistency whether the information gathered. It was related to the whole purpose of the survey. The test had also 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 was carried out during the month of January 2014 prior to the survey at rural area of Bogra Sadar Upazila under Bogra District and Gobindaganj Upazila under Gaibandha District. A group including Programme Director, some members of the working committee had gone to the two places mentioned to take part in testing the questionnaire. They had chosen some of the farmers at random as the respondents.

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 had been made. This had been eventually adopted properly in the final questionnaire. During the pre-test, it had been found that farmers, the respondents did not feel comfortable to respond to the questions relating to the total area of the land under Chilli crop. Considering the fact, the structure of the questionnaire had been changed.

2.2.5 Finalization of the Questionnaire:

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

2.2.6 Training of the Supervisors and Enumerators:

A two days training was arranged in order to make the Supervisors 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. Two days training programme conducted by the Programme Director had been arranged at the head office of BBS in Dhaka. On the first day the participants received rigorous training on the concepts, definitions and the questionnaire and on the next day they had gone to the rural area of Savar Upazila with a view to have hands-on exercise on the questionnaire. In the second phase, Enumerators had been trained for two days by the Master Trainers at the District Statistical Offices (DSOs) following the same sequence as the training arranged at the first phase. At first, Enumerators received training on the questionnaire and in the next day they also visited field at remote area of the respective district in order to gather experience. However, most of the trainees both Supervisors 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 had been carried out following Paper and Pencil (PAPI) method.

2.2.8 Data Collection and Supervision:

Data collection had taken place during Mach-April 2014 at household level. Usually the respondents were the head of household. The total of 210 enumerators, who were the employees of BBS and had proven experience in this field, had been engaged in data collection from the farm households and the total of 58 Supervising Officers named District officer were responsible for supervising the data collection task. All Supervising Officers had been directed to stay at the respective district during the period of data collection so that they could extensively supervise data collection task and address instantly any untoward problem arising during data collection. Seven Divisional Coordinators including Program Director were also responsible to oversee all activities at field level relating to data collection. Furthermore, all possible measures had been taken to obtain a good quality of data.

2.2.9 Data Editing and Coding:

Data editing and coding were other vital phases of the survey, which was indispensable for data processing. It should be completed before data processing. In case of this survey, coding had been done along with questionnaire development so that the enumerator could easily and accurately mark the right answers.

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

2.3 Data Processing:

Data processing involved many steps that were very important because it affected survey results according to the involved steps. During data processing following steps had been taken.

- Data entry
- Appending and Merging files
- Data validation (further computer 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.

2.3.1 Data Entry:

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

(1) Software Used: Five software namely CSPro, FoxPro, Oracle (SQL), SPSS and Excel had been used for processing the survey data. CSPro had been used for data entry, FoxPro for editing 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 had consisted of ID items, records, items of the records, and also values of the items. Logic check was also maintained to avoid errors of inconsistency. After finishing the data dictionary, the data entry forms had been developed depending on data dictionary. After that, the data entry form was tested and, therefore, readily available for use.

(3) Data capturing and Preliminary Validation:

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

- **Wrong data and out of range codes:** Firstly, the data collection instrument restricted the enumerator to a set of codes within the acceptable range for most of the questions. Secondly, the values had been set for avoiding wild codes for most of the questions. For example, the code for ownership of land had been set 1 to 4.
- **Inconsistency checking:** It had been done during designing the data entry program to avoid errors and inconsistency.
- **Treatment of Missing values:** The data entry program had been designed not to allow blanks that ensure not having missing values in the data.
- **Incomplete records and dropped cases:** The data entry program had designed to accept the complete data case; otherwise, it would not be saved. This had been set to avoid incomplete records and dropped cases.

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

(4) Appending and Merging files:

After data entry, files had properly been appended and merged in order to bring all data in a single file.

(5) Data Validation:

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

(6) Final decision on errors:

If there had been found any error during data validation, it was checked and rechecked; and sometimes it had 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 had been completed and generated a data file which contained micro data.

(8) Data preservation:

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

2.4 Tabulation:

Thirty tables focusing on the vital components such as total number of labours engaged in production of Chilli, cost of land preparation, seedlings used and their price, fertilizer used and their price, cost of insecticides, cost of Harmon by season etc. had been generated. All these tables had been given in the part of analysis and annex.

2.5 Data Analysis:

Survey results had been analyzed in tabular form. Major variable was explained vertically (columns) and cross tabulation by another related variable(s) horizontally. In the analysis, it had described the variation of the magnitude of the major variables by national. Many aspects of production and the cost of production of Chilli had also been explained nationally.

2.6. Data Dissemination:

The final report had 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 Yearbook of Bangladesh, Yearbook of Agriculture Statistics and Monthly Statistical Bulletin etc.

Chapter-3

Area and Household

Area and Household

The information as obtained from the Productivity Survey 2014 of chilli crop in Bangladesh have been discussed in this chapter. It contains data related to:

i. Area under land tenureship of chilli cultivation by division;
ii. Housesholds cultivating chilli by division and tenancy;
iii. Cultivation type of single and mixed crops by division;
iv. Chilli producing households by cultivation type and division;
v. Varieties of chilli households by division; and
Vii. Per acre leasing cost of chilli crop by stratum.

Table-3.1: Percentage distribution of chilli cultivation area by land tenureship and division

Division	Land tenureship											
	Total		Owned		Share Crop		Mortgage		Lease		Other	
	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%
Bangladesh	434757	100.0	330910	76.11	33270	7.65	22862	5.26	41231	9.48	6485	1.49
Barisal	31546	7.26	22693	5.22	1791	0.41	516	0.12	6518	1.50	29	0.01
Chittagong	84683	19.48	52052	11.97	17591	4.05	1653	0.38	7279	1.67	6109	1.41
Dhaka	112450	25.87	82026	18.87	6223	1.43	11146	2.56	12958	2.98	97	0.02
Khulna	42405	9.75	33075	7.61	1056	0.24	1837	0.42	6371	1.47	67	0.02
Rajshahi	77406	17.80	63167	14.53	4567	1.05	5508	1.27	4164	0.96		0.00
Rangpur	77316	17.78	69994	16.10	1541	0.35	1945	0.45	3767	0.87	68	0.02
Sylhet	8950	2.06	7902	1.82	501	0.12	257	0.06	174	0.04	116	0.03

* 1 hector=2.47 acre

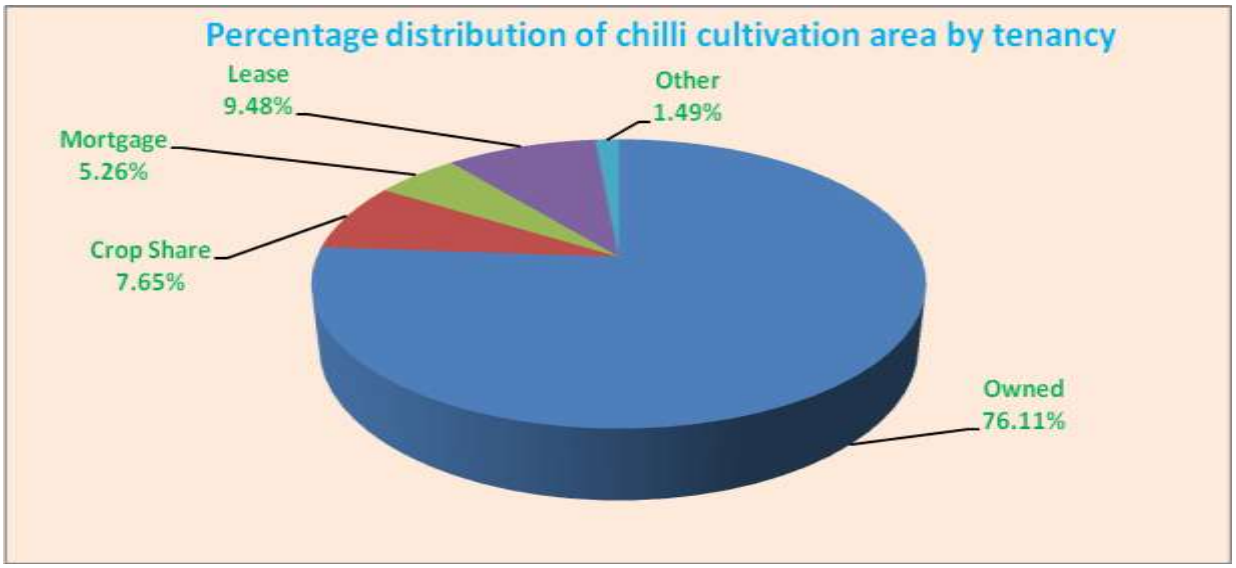


Table 3.1 describes the area of chilli crop under all tenureship of owned land, share crop, mortgage, lease and others separately for division for the year 2014. The table shows that a total of 434757 acres of land are under chilli crop of which an over whelming majority

of 330910 acres are owned land (76.11%) followed by 41231 acres of lease land (9.48%), 33270 acres of share crop land (7.65), 22862 acres of mortgage land (5.26%) and 6485 acres of other land (1.49%). On the other hand, it is observed from the table that the highest 112450 acres of land are in Dhaka division (25.87%) followed by 84683 acres of land in Chittagong (19.48%), 77406 acres of land in Rajshahi (17.80%), 77316 acres of land in Rangpur (17.78%), 42405 acres of land in Khulna (9.75%), 31546 acres of land in Barisal (7.26%) and 8950 acres of land in Sylhet division (1.82%) respectively.

Table-3.2: Percentage distribution of households cultivating chilli household by tenancy & division

Division	Land tenureship											
	Total		Owned		Crop Share		Mortgage		Lease		Other	
	H/H	%	H/H	%	H/H	%	H/H	%	H/H	%	H/H	%
Bangladesh	2575605	100.00	2079894	80.75	220583	8.56	109272	4.24	192041	7.46	27058	1.05
Barisal	195442	7.59	163052	6.33	12119	0.47	3305	0.13	18729	0.73	661	0.03
Chittagong	610175	23.49	405423	15.74	116321	4.52	14965	0.58	63943	2.48	21087	0.82
Dhaka	656450	25.49	537635	20.87	47526	1.85	43070	1.67	40100	1.56	2228	0.09
Khulna	242210	9.40	200238	7.77	6684	0.26	9624	0.37	30744	1.19	1069	0.04
Rajshahi	344733	13.38	290892	11.29	20916	0.81	25177	0.98	21304	0.83		0.00
Rangpur	389090	15.11	357588	13.88	10217	0.40	10643	0.41	14900	0.58	851	0.03
Sylhet	137506	5.34	125066	4.86	6801	0.26	2488	0.10	2322	0.09	1161	0.05

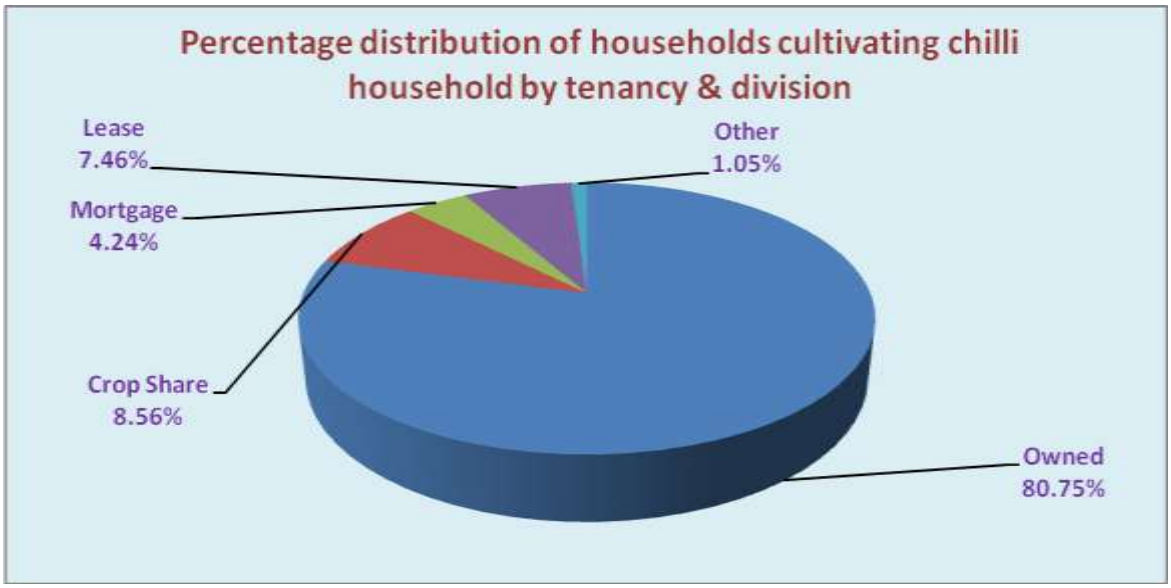


Table 3.2 shows the households cultivating chilli by all tenureship of own land, share crop, mortgage, lease and others by division for the survey year 2014.The above table 3.2 shows that out of 2575605 chilli producing households, the highest 80.75% households have owned the land trailing far behind by 8.56% households having share

crop tenureship, 7.46% households having leased tenureship, 4.24% households having mortgaged tenureship and only 1.05% households having other category of tenureship. (The percentage of total tenureship households exceeds 100% as the same households repeats cultivation in different tenureship) The table further shows that out of total households, 656450 households are in Dhaka division (25.49%), 610175 households are in Chittagong division (23.49%) and the rest five divisions together have 1308981 households (50.82%) producing chilli in the country in the year 2014.

Table-3.3: Percentage distribution of chilli cultivation area by farming time & division

Division	Farming time					
	Total		Summer		Winter	
	Area	%	Area	%	Area	%
Bangladesh	434757	1.00	183284	42.16	251473	57.84
Barisal	31546	7.26			31546	7.26
Chittagong	84683	19.48	31896	7.34	52787	12.14
Dhaka	112451	25.87	50400	11.59	62051	14.27
Khulna	42405	9.75	34305	7.89	8100	1.86
Rajshahi	77406	17.80	26114	6.01	51292	11.80
Rangpur	77316	17.78	40514	9.32	36802	8.46
Sylhet	8951	2.06	55	0.01	8896	2.05

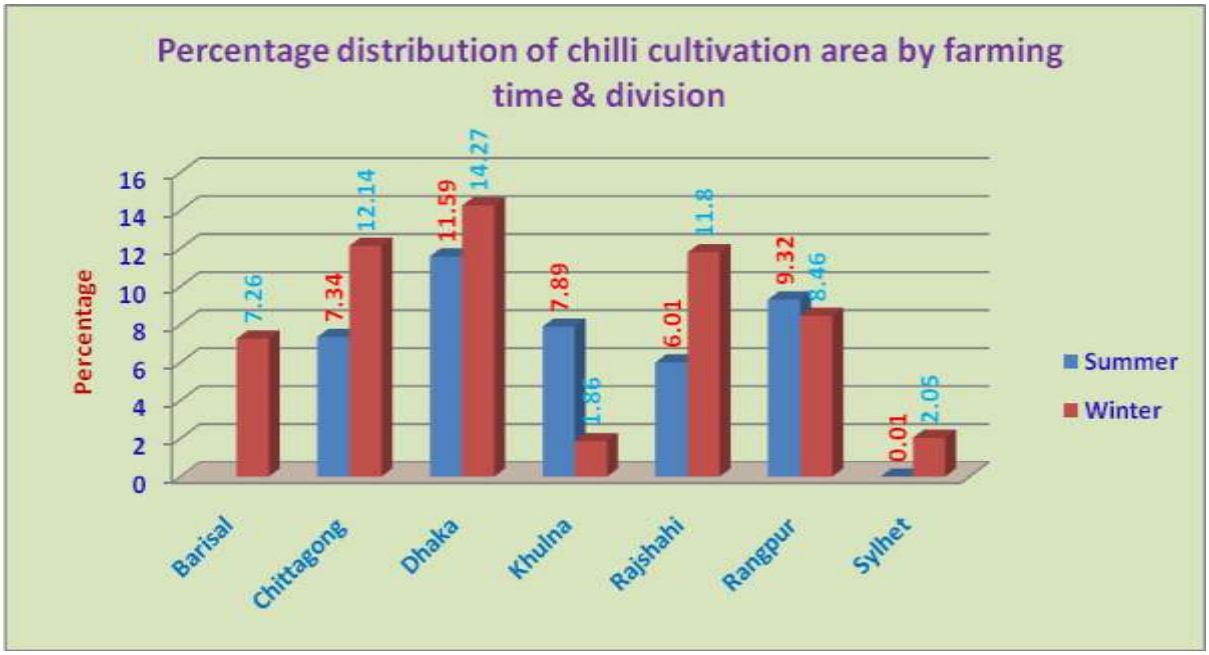
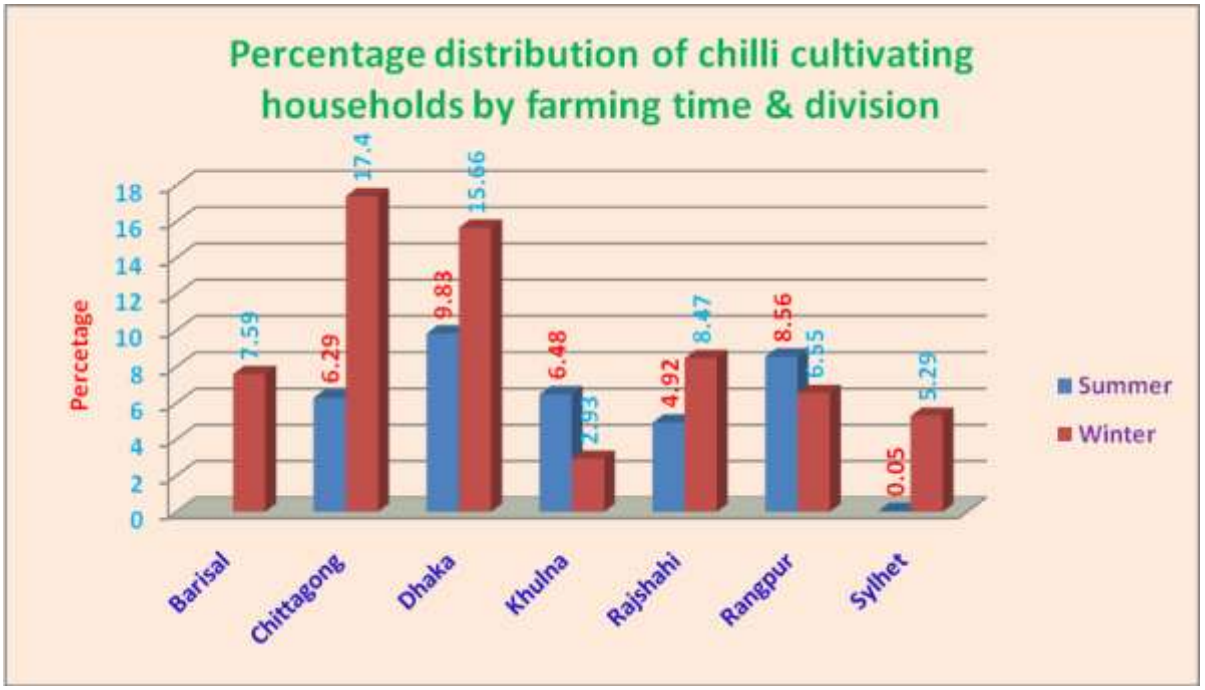


Table 3.3 shows the cultivated area of chilli by farming time of summer and winter by division. From the above table 3.3 we can see that out of 434757 acres of land 42.16% and 57.84% areas have been cultivated for the summer and winter farming times respectively. The table also indicates that chilli crop is cultivated only in winter season in Barisal division and in Sylhet division only 55 acres of land are cultivated for chilli in summer season and the rest 8896 acres of land are cultivated winter season.

Table-3.4: Percentage distribution of chilli cultivating households by farming time & division

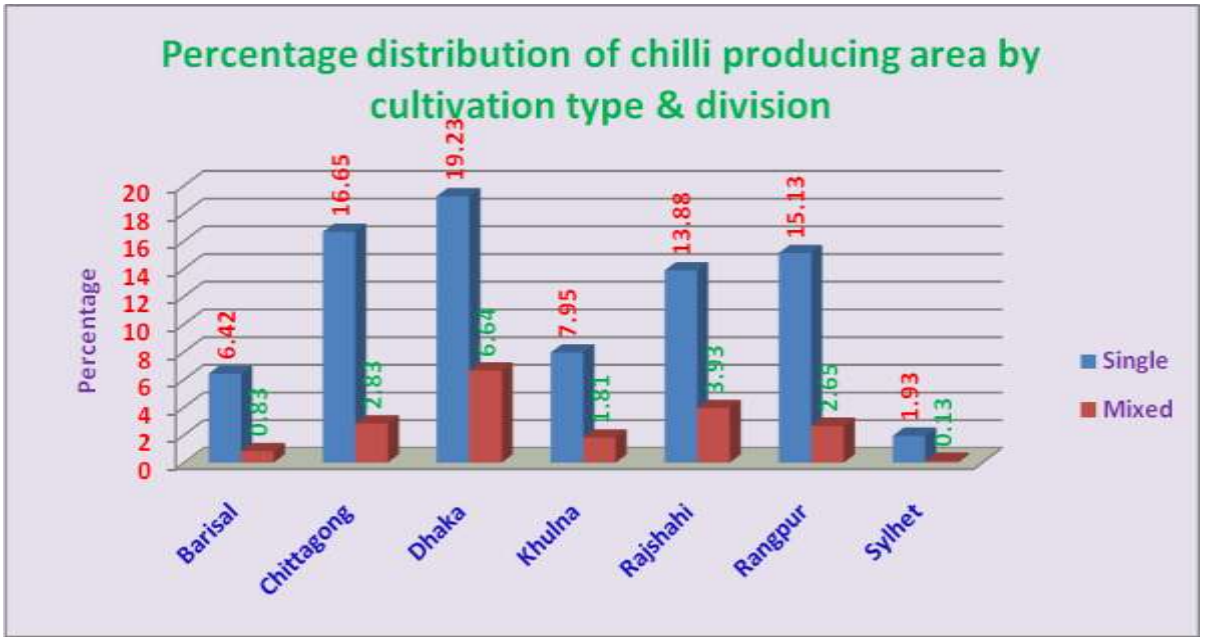
Division	Farming time					
	Total		Summer		Winter	
	Household	%	Household	%	Household	%
Bangladesh	2575605	100.00	930440	36.13	1645165	63.87
Barisal	195442	7.59	-	-	195442	7.59
Chittagong	610175	23.69	161897	6.29	448278	17.40
Dhaka	656450	25.49	253223	9.83	403226	15.66
Khulna	242210	9.41	166820	6.48	75390	2.93
Rajshahi	344733	13.39	126660	4.92	218072	8.47
Rangpur	389090	15.11	220513	8.56	168577	6.55
Sylhet	137506	5.34	1327	0.05	136179	5.29



It is found from the above table 3.4 that out of 2575605 households 36.13% and 63.87% households have been cultivating chilli crop for the summer and winter season respectively. The table highlights that chilli crop is cultivated only in winter season in Barisal division and only 1327 households (0.05%) from Sylhet division cultivate chilli in the summer season and the remaining 136179 households cultivate chilli crop in winter season.

Table-3.5: Percentage distribution of chilli producing area by cultivation type & division

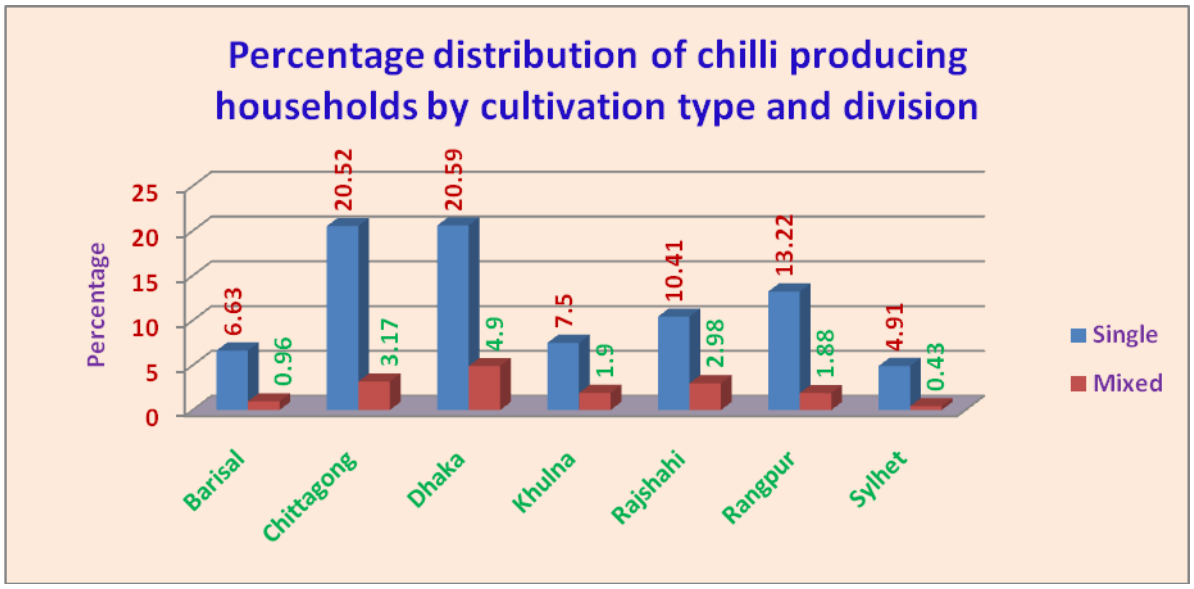
Division	Type of cultivation					
	Total		**Single**		**Mixed**	
	Area	%	Area	%	Area	%
Bangladesh	434757	100.00	352926	81.18	81831	18.82
Barisal	31546	7.25	27917	6.42	3629	0.83
Chittagong	84683	19.48	72371	16.65	12312	2.83
Dhaka	112450	25.87	83586	19.23	28864	6.64
Khulna	42406	9.76	34554	7.95	7852	1.81
Rajshahi	77406	17.81	60336	13.88	17070	3.93
Rangpur	77316	17.78	65775	15.13	11541	2.65
Sylhet	8950	2.06	8388	1.93	562	0.13



The above table 3.5 shows that out of total 434757 acres of land an overwhelming majority of 352926 acres (81.18%) of land are used for single cropped area trailing far behind by mixed cropped area of 81831 acres (18.82%) of land. It is noticeable that type land cultivation of chilli crop varies from division to division. The mixed crop type of cultivation of chilli is found significant in two divisions of Dhaka (6.64%) and Rajshahi (3.93%). In rest of other divisions of Barisal, Chittagong, Khulna, Rangpur and Sylhet mixed cultivation type is very low and together they comprised 8.25%. Single cultivation type of chilli crop is however very significant in all division except in sylhet where it is 1.93%.

Table-3.6: Percentage distribution of chilli producing households by cultivation type and division

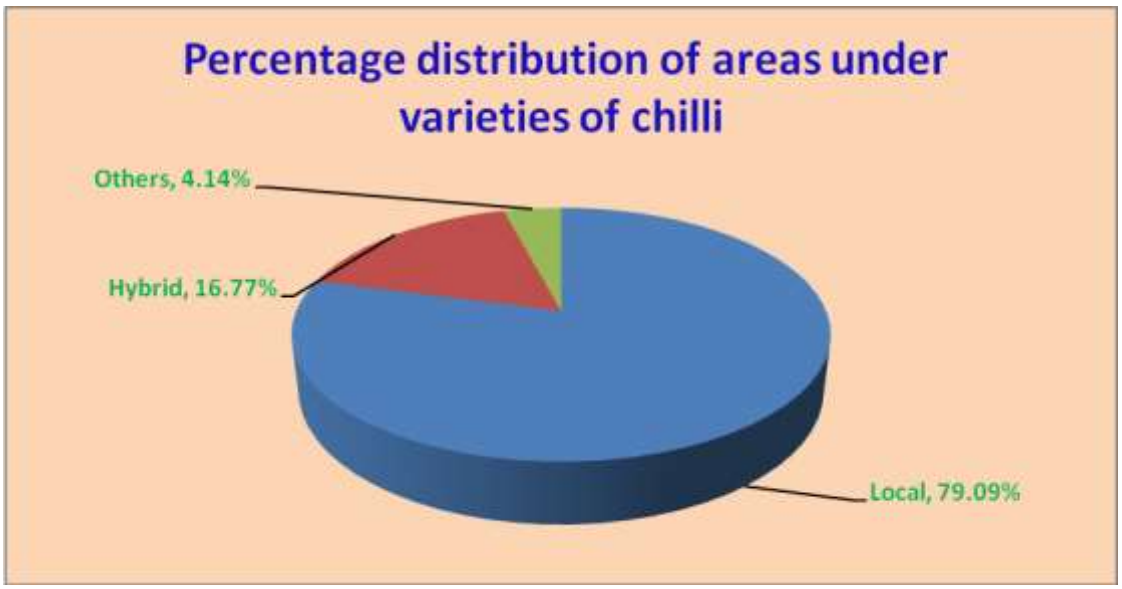
Division	Type of cultivation					
	Total		**Single**		**Mixed**	
	Household	%	Household	%	Household	%
Bangladesh	2575605	100.00	2157798	83.78	417807	16.22
Barisal	195442	7.59	170763	6.63	24678	0.96
Chittagong	610175	23.69	528546	20.52	81629	3.17
Dhaka	656450	25.49	530209	20.59	126240	4.90
Khulna	242210	9.40	193287	7.50	48923	1.90
Rajshahi	344732	13.38	268039	10.41	76693	2.98
Rangpur	389090	15.11	340560	13.22	48530	1.88
Sylhet	137506	5.34	126393	4.91	11113	0.43



The above table 3.6 clearly indicates that out of 2575605 households, 83.78% produce chilli as a single crop whereas 16.22% households cultivate chilli along with other crops. The highest percentage of growing chilli as a single crop is the highest of households 20.59% in Dhaka division followed very closely by 20.52% in Chittagong division. But only 4.90 % and 3.17% households in Dhaka and Chittagong divisions produce chilli as a mixed crop respectively. Significant percentages of 13.22% and 10.41% households also produce chilli as a single crop in Rangpur and Rajshahi division respectively.

Table-3.7: Percentage distribution of areas (acre) under varieties of chilli by division

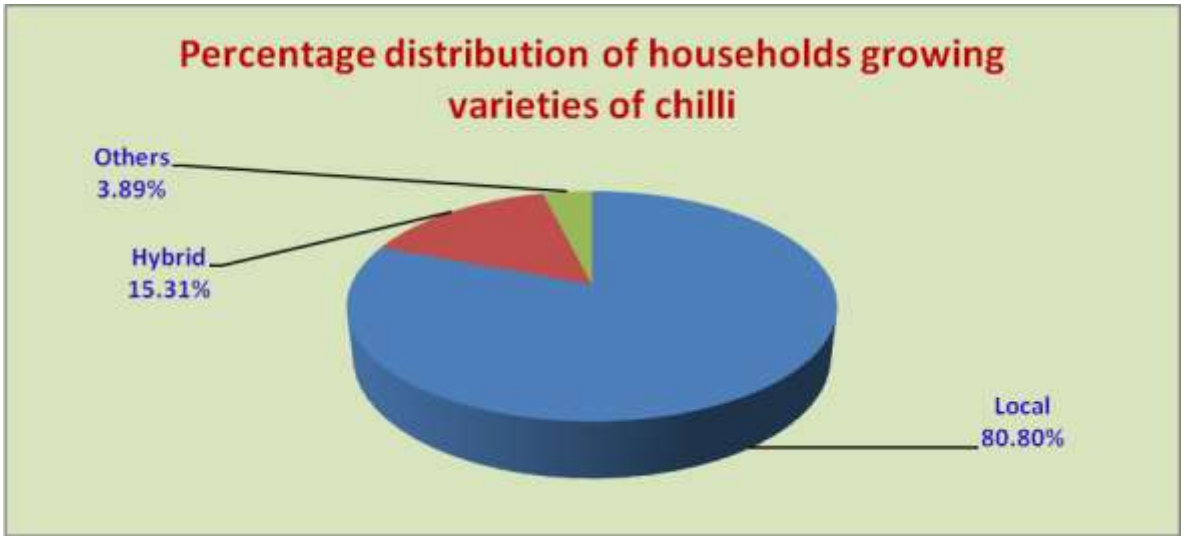
Division	Varieties of chilli							
	Total		Local		Hybrid		Others	
	Area	%	Area	%	Area	%	Area	%
Bangladesh	434757	100.00	343838	79.09	72900	16.77	18020	4.14
Barisal	31546	7.26	30993	7.13	485	0.11	68	0.02
Chittagong	84683	19.48	58528	13.46	18101	4.16	8054	1.85
Dhaka	112450	25.87	97636	22.46	14369	3.31	446	0.10
Khulna	42405	9.75	18679	4.30	22326	5.14	1401	0.32
Rajshahi	77406	17.80	67730	15.58	5508	1.27	4168	0.96
Rangpur	77316	17.78	62987	14.49	10728	2.47	3601	0.83
Sylhet	8950	2.06	7285	1.68	1383	0.32	282	0.06



The table-3.7 distributes the division wise cultivated area of chillies by varieties for the year 2014. Out of the three varieties, local has the highest cultivation area of chilli which is 79.09%. The second highest 16.77% of land is used for the Hybrid variety of chilli. And the remaining land areas of 4.14% have been used for all other varieties of Chilli. It is mentionable that 5.14%, 4.16%, 3.31% and 2.47% acres of land are used for Hybrid variety in Khulna, Chittagong, Dhaka and Rangpur division respectively whereas the remaining three divisions cultivate only 1.70% land for Chilli.

Table-3.8: Percentage distribution of households growing varieties of chilli by division

Division	Varieties of Chilli							
	Total		Local		Hybrid		Others	
	H/H	%	H/H	%	H/H	%	H/H	%
Bangladesh	2575605							
Barisal	100.00	2081186	80.80	394238	15.31	100180	3.89	
Chittagong	7.59	189713	7.37	5068	0.20	661	0.03	
Dhaka	23.69	444877	17.27	98635	3.83	66664	2.59	
Khulna	25.49	588874	22.86	66833	2.59	743	0.03	
Rajshahi	9.40	106401	4.13	124580	4.84	11228	0.44	
Rangpur	13.38	298252	11.58	36410	1.41	10071	0.39	
Sylhet	15.11	339283	13.17	42144	1.64	7663	0.30	0.12



The table-3.8 provides the percentage distribution of households cultivating chilli by variety of chilli and division for the year 2014. The table also shows that the highest percentage (80.80%) of chilli producing households is local, followed very remotely by hybrid (15.31%) and others (3.89%) for the survey year. Division-wise we can see that the highest 25.49% households is producing chilli in Dhaka division which is slightly lower at 23.69% in Chittagong division. It is mentioned that other variety of chilli for the Chittagong division are cultivated (2.59%) of the total area whereas, rest of the six division are cultivated only 1.30%.

Table-3.9: Per acre leasing cost of chilli crop by division

Division	**Per acre leasing cost (Tk.)**
Bangladesh	8879
Barisal	5316
Chittagong	8444
Dhaka	9470
Khulna	9039
Rajshahi	9808
Rangpur	9613
Sylhet	8421

Leasing means the land taken from others by the household for the cultivation of chilli crop only on payment of money to the land owner. Leasing value per acre is found to be significantly different between divisions. Local leasing value has also been counted in case of households who cultivate the crop in their own lands. The average per acre leasing cost for chilli crop in Bangladesh is Taka 8879.

Chapter-4

Production Cost

Production Cost

The chapter contains data on per acre production cost of chilli by division and tenancy. The cost includes per acre production of varieties of chilli by tenancy. The various ingredient of chilli production viz land preparation, seed and seedling related, weeding, irrigation, pesticide/insecticide, fertilizer, harmon, harvesting, transport and others have been taken into consideration in obtaining the cost of production.

Table-4.1: Per acre production cost (Tk.) by ingredient & division

Division	Production ingredient										
	Total	Land Preparation	Seed & seedling related	Weeding	Irrigation	Pesticides/ insecticide	Fertilizer	Harmon	Harvesting	Transport	Others
All	45242	4111	7024	5175	3556	3398	9251	728	9541	1765	693
Barisal	31553	4904	7344	2836	1467	2491	3754	600	6734	887	536
Chittagong	47878	4686	7297	6418	4145	3419	9710	650	8599	2084	866
Dhaka	45424	3759	7857	5094	3901	3150	8748	696	10064	1595	560
Khulna	49449	4091	6230	5593	4695	3937	10966	632	10307	2116	823
Rajshahi	49205	3840	6535	6389	3038	3997	10896	817	10831	2259	603
Rangpur	41811	3990	6349	3573	3180	3165	9078	857	9465	1389	766
Sylhet	41673	3781	6662	4052	3294	3813	9733	911	7640	1279	509

* 1 hector=2.47 acre

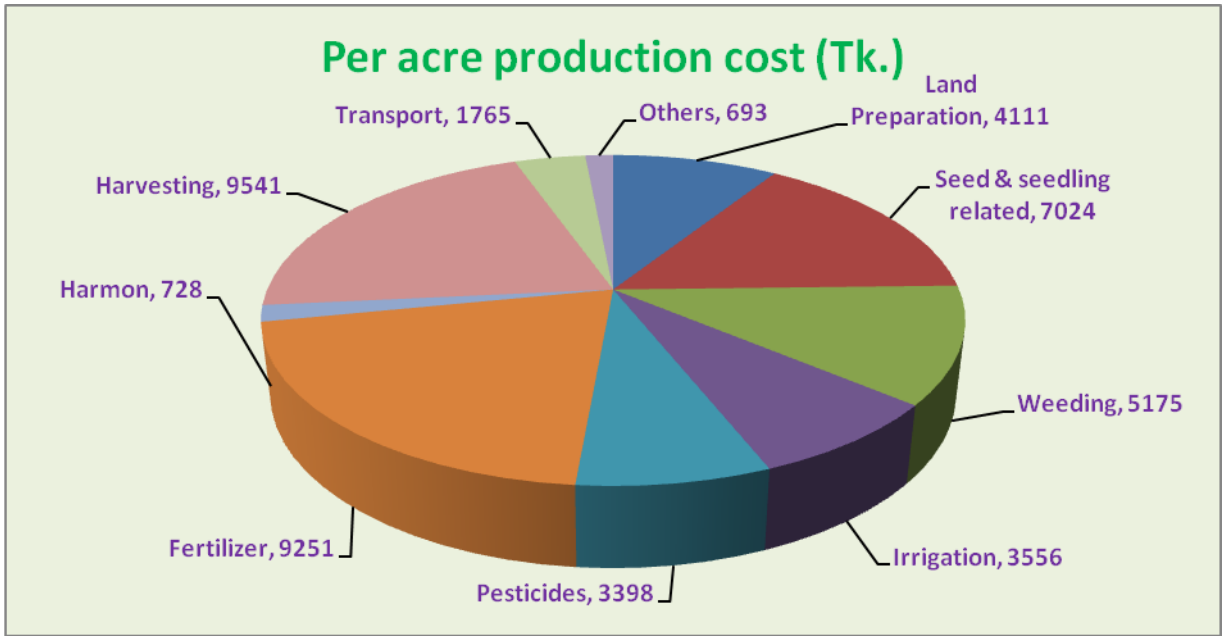


Table-4.1 presents the per acre production cost of chilli on an average in Bangladesh which is Taka 45242 for the year 2014. Whereas the highest per acre production cost of chilli is Tk. 49449 in Khulna division, it is the lowest of Taka 31553 in Barisal division. Thus there is a wide variation of 56.72% between the lowest and the highest per acre production cost of chilli between the divisions of Bangladesh. The table reveals that the highest per acre production cost of ingredient is Taka 9541 in harvesting followed

closely by fertilizer (Taka 9251), then by seed & seedling related (Taka 7024), weeding (Taka 5175), etc. However, the cost for fertilizer is the highest of Taka 10966 in Khulna division followed by harvesting (Taka 10896) in Rajshahi division.

Table-4.2: Per acre production cost (TK) by land tenureship separately for farming time

Tenure Ship	Per acre production cost (Tk.)										
	Total	Land Preparation	Seed & seedling related	Weeding	Irrigation	Pesticides/ insecticide	Fertilizer	Harmon	Harvesting	Transport	Others
All											
All	45242	4111	7024	5175	3556	3398	9251	728	9541	1765	693
Owned	44752	4219		4932	3530	3384	9257	741	9226	1728	715
All Others	46495	3814	7015	5843	3625	3434	9181	690	10397	1866	629
Summer											
Average	45899	3990	6620	5671	3784	3310	9202	791	9836	1898	796
Owned	45669	4111	6915	5336	3733	3328	9373	753	9503	1789	829
All others	46404	3712	5940	6436	3901	3269	8800	873	10603	2150	721
Winter											
Average	44762	4199	7318	4814	3388	3463	9286	683	9326	1668	617
Owned	44139	4291	3390	4662	3394	3423	9179	733	9040	1688	639
All others	45579	3909	8005	5298	3370	3586	9533	522	10207	1605	545

Table 4.2 presents per acre production cost of chilli in two groups of tenureship viz, owned and others which include share crop, mortgage, lease and others. As owned land alone occupies about 76% of the land, all other minor groups have been taken together in tenureship analysis. The table shows that in owned land tenureship fertilizer shows one fifth (20.68%) of the total cost followed very closely by harvesting (20.62%), seed and seedling related (15.69%), land preparation (9.43%). By taking all other tenureships into one group, per acre cost of production is found to be almost similar for major category of costing like fertilizer, seed & seedling related ingredients etc. The cost of summer chilli is found to be slightly higher by 2.54% than that of winter chilli.

Table-4.3: Per acre production cost (TK) by varieties of chilli separately for farming time

Varieties of Chilli	Per acre production cost (Tk.)										
	Total	Land Preparation	Seed, seedling, plantation	Weeding	Irrigation	Pesticides/ insecticide	Fertilizer	Harmon	Harvesting	Transport	Others
All											
All	45242	4111	7024	5175	3556	3398	9251	728	9541	1765	693
Local	43714	3934	6600	5173	3460	3286	8963	702	9378	1601	619
Hybrid	51963	5049	8891	4804	4134	4083	10721	787	10140	2411	944
Others	46468	3691	7416	6701	3031	2759	8440	981	10105	2280	1064
Summer											
Average	45899	3990	6620	5671	3784	3310	9202	791	9836	1898	796
Local	44554	4049	6307	5473	3782	3240	8799	716	9628	1792	768
Hybrid	54285	3756	7730	6282	4650	4255	12389	1131	11081	2254	758
Others	45436	3802	7837	6552	2466	2504	8011	947	9855	2340	1121
Winter											
Average	44762	4199	7318	4814	3388	3463	9286	683	9326	1668	617
Local	43109	3851	6810	4956	3227	3319	9082	691	9198	1462	512
Hybrid	50837	5676	9454	4087	3884	3999	9912	620	9684	2487	1034
Others	52446	3049	4977	7562	6304	4238	10925	1174	11555	1930	733

The above table shows that the average per acre production cost is Taka 51963 for hybrid variety followed by other variety costing Taka 46468 and the lowest per acre production cost is Taka 43714 for local variety. The table also indicates that in both seasons production cost for ingredients is the highest for harvesting (Taka 9241) followed by fertilizer (Taka 9251) and seed & seed related cost (Taka 7024) respectively.

Table-4.4: Per acre production cost by farming season and size of land

Size of land (acre)	**Farming Season**		
	All	**Summer**	**Winter**
All	`45242	45899	44762
<= 0.04	42915	44890	42316
0.05 – 0.49	46344	46374	46321
0.50 – 0.99	44613	45263	44074
1.00 – 1.49	40533	44608	37327
1.50 – 2.49	35021	41725	33620
2.50 – 4.99	37568	39579	35113
5.00 - 7.50		-	-
7.50 +	-	-	-

Table-4.4 presents that per acre production cost and size of land planted by seasonality for the year 2014. For summer, beginning with size of land 0.05 to 0.49 as the size of land increased, the cost of per acre production decreased. Similar tendency is found in winter except in size of land <= 0.04 acre.

Table-4.5: Per Kg Production cost (Tk.), per acre production cost (Tk.) and quantity (Kg) of chilli by division

Division	Per Kg Production cost (Tk), per acre production cost (Tk) and quantity (Kg)								
	All Areas			Summer			Winter		
	Per Kg production cost (Tk.)	Per acre production		Per Kg production cost (Tk.)	Per acre production		Per Kg production cost (Tk.)	Per acre production	
		Cost (Tk.)	Qty. (Kg.)		Cost (Tk.)	Qty. (Kg.)		Cost (Tk.)	Qty. (Kg.)
All	50.78	45242	891.0	49.60	45899	925.3	51.66	44762	866.3
Barisal	54.26	31553	581.5	-	-	-	54.26	31553	581.5
Chittagong	56.96	47878	840.5	61.34	44368	723.3	54.84	49999	911.8
Dhaka	55.91	45424	812.5	55.59	44487	800.3	56.12	46185	823.0
Khulna	44.36	49449	1114.8	43.82	51420	1173.5	47.39	41101	867.3
Rajshahi	46.52	49205	1057.8	45.31	52150	1151.0	47.21	47706	1010.5
Rangpur	45.42	41811	920.5	45.60	40171	881.0	45.20	43617	965.0
Sylhet	61.94	41673	672.8	63.98	35703	558.0	61.93	41710	673.5

The above table reveals that the average per kilogram production cost of chilli in Bangladesh is Taka 50.78 whereas the cost in summer is Taka 49.60 and in winter is Taka 51.66 respectively. The table also shows that the highest average per kilogram production cost of chilli crop is in Sylhet division at Taka 61.94 and the lowest average per kilogram production cost is in Khulna division at Taka 44.36 respectively.

Table-4.6: Per Kg Production cost (Tk.), per acre production cost (Tk.) and quantity (Kg) by varieties of chilli

Varieties of Chilli	Per Kg Production cost (Tk), per acre production cost (Tk) and quantity (Kg)								
	All			Summer			Winter		
	Per Kg production cost (Tk.)	Per acre production		Per Kg production cost (Tk.)	Per acre production		Per Kg production cost(Tk.)	Per acre production	
		Cost (Tk.)	Qty. (Kg.)		Cost (Tk.)	Qty. (Kg.)		Cost (Tk.)	Qty. (Kg.)
All	50.78	45242	891.0	49.60	45899	925.3	51.66	44762	866.3
Local	51.98	43714	841.0	50.37	44554	884.5	53.22	43109	810.0
Hybrid	45.90	51963	1132.0	45.73	54285	1187.0	45.99	50837	1105.3
Others	53.17	46468	841.0	50.46	45436	900.5	72.96	52446	718.8

The above table reveals that the average per kilogram production cost of chilli in local variety is Taka 51.98; in hybrid variety is Taka 45.90 and in the other variety is Taka 53.17 respectively. In the summer season the lowest per kilogram production cost of hybrid variety is Taka 45.73 whereas local & other varieties are almost the same at Taka 50**.** On the other hand, in the winter season the highest per kilogram production cost for other variety is Taka 72.96 followed by local variety of Taka 53.22 and the hybrid variety of Taka 45.99 respectively.

Table-4.7: Per Kg Production cost (Tk), per acre production cost (Tk) & quantity (Kg) by tenancy.

Tenure Ship	Per Kg Production cost (Tk) , per acre production cost (Tk) and quantity (Kg)								
	All Areas			Summer			Winter		
	Per Kg production cost (Tk.)	Per acre production		Per Kg production cost (Tk.)	Per acre production		Per Kg production cost (Tk.)	Per acre production	
		Cost (Tk.)	Qty. (Kg.)		Cost (Tk.)	Qty. (Kg.)		Cost (Tk.)	Qty. (Kg.)
All	50.78	45242	891.0	49.60	45899	925.3	51.66	44762	866.3
Owned	50.78	44752	881.3	50.74	45669	900.0	50.76	44139	869.5
All others	50.66	46495	917.8	47.23	46404	982.5	53.17	45579	857.3

Note: All others tenancy means all tenancy excluding owned land

The 4.7 shows that the average production cost per kilogram of chilli in land of owned tenureship is Taka 50.78 and by all others tenureship is Taka 50.66. The production cost per kilogram of chilli is Taka 47.23 in all other tenancy in summer season is lower than that in winter season (Taka 53.17) and is significantly different between summer and winter seasons. The production cost of per kilogram chilli is almost the same at the country level in both summer and winter seasons.

Chapter-5

Labour and Labourer’s Cost

Labour and Labourer's Cost

Information related to number and cost of labourers for plantation, weeding and harvesting have been discussed in this chapter.

Table-5.1: Per acre number of labourer engaged and cost of plantation by division

Division	All Areas				Summer				Winter			
	Number of Labour			Labour cost (Tk.)	Number of Labour			Labour cost (Tk.)	Number of Labour			Labour cost (Tk.)
	Family	Hired	Total		Family	Hired	Total		Family	Hired	Total	
All	12.30	8.68	20.98	2598	11.19	10.44	21.62	2726	13.09	7.38	20.47	2505
Barisal	15.34	9.58	24.92	2891	-	-	-	-	15.34	9.58	24.92	2891
Chittagong	13.60	9.36	22.95	2589	11.45	3.71	15.16	2614	14.91	12.75	27.66	2575
Dhaka	12.86	5.61	18.47	2926	10.26	7.94	18.20	3001	14.96	3.71	18.67	2865
Khulna	13.18	10.98	24.14	2777	11.44	12.41	23.85	2818	20.56	4.76	25.32	2626
Rajshahi	9.16	8.45	17.61	2037	10.53	12.32	22.85	2003	8.97	6.47	15.44	2055
Rangpur	10.21	11.47	21.66	2495	12.92	15.92	28.84	2860	7.19	6.53	13.72	2092
Sylhet	14.68	4.69	19.37	2396	19.46	-	19.46	2706	24.53	4.71	27.24	2393

In the above table it is observed that the average number of required labourers for per acre plantation at national level is 20.98 persons and their cost is Taka 2598. The highest number of required labourers in Barisal division is 24.92 persons and their cost is Taka 2891. The lowest number of required labourers is in Rajshahi division which is 17.61 persons and their cost is Taka 2037. Between the two seasons, the average required number of labourers is significantly different between divisions. The average number of required labourers is 21.62 persons in summer and 20.47 persons in winter season, which however shows more or less similar.

Table-5.2: Per acre number of labour engaged and cost of weeding by division

Division	All Areas				Summer				Winter			
	Number of Labour			Labour cost (Tk.)	Number of Labour			Labour cost (Tk.)	Number of Labour			Labour cost (Tk.)
	Family	Hired	Total		Family	Hired	Total		Family	Hired	Total	
All	8.68	18.44	27.12	5175	11.33	31.72	43.05	5671	6.74	8.76	15.50	4814
Barisal	5.33	7.89	13.22	2836	-	-	-	-	5.33	7.89	13.22	2836
Chittagong	7.99	24.01	32.00	6418	8.74	49.05	57.79	7348	7.53	8.88	16.41	5857
Dhaka	11.51	17.20	28.71	5094	16.27	27.61	43.88	4777	7.66	8.74	16.40	5351
Khulna	6.51	26.33	32.84	5593	6.28	31.45	33.73	6156	7.46	4.65	12.11	3205
Rajshahi	7.82	18.01	25.83	6389	10.56	35.38	45.94	8149	6.42	9.18	15.60	5493
Rangpur	8.52	15.98	24.50	3579	12.04	21.03	33.07	3460	4.64	10.41	15.05	3698
Sylhet	10.42	5.96	16.38	4052	-	30.30	30.30	1773	10.48	5.82	16.30	4066

Table 5.2 shows that the average number of required labourer for per acre weeding at national level is 27.12 persons and their cost is Taka 5175. The average number of labourer required is higher in the summer season at 43.05 persons and their cost is Taka 5671 which are lower in the winter season with 15.50 persons and their

lobour cost of Taka 4814 respectively. It is noticeable that nearly three times more labourers is required in summer season than that in winter season.

Table-5.3: Per acre number of labour engaged and cost of harvesting by division

Division	All Areas				Summer				Winter			
	Number of Labour			Labour cost (Tk.)	Number of Labour			Labour cost (Tk.)	Number of Labour			Labour cost (Tk.)
	Family	Hired	Total		Family	Hired	Total		Family	Hired	Total	
All	29	44	73	9541	27	48	75	9836	30	41	71	9326
Barisal	31	16	47	6734	-	-	-	-	31	16	47	6734
Chittagong	22	39	61	8599	15	49	64	8098	25	34	59	8901
Dhaka	38	43	81	10064	38	45	83	10164	37	39	76	9984
Khulna	19	46	65	10307	15	47	62	10677	37	43	80	8738
Rajshahi	19	66	85	10831	22	69	91	11127	16	65	81	10680
Rangpur	39	43	82	9465	37	39	76	9252	40	47	87	9700
Sylhet	44	11	55	7640	48	-	48	8591	44	11	55	7635

The above table provides the average number of labourers required for per acre harvesting at national level which is 73 persons and their cost is Taka 9541 during the survey years. The average number of required labourers in Rajshahi division is the highest of 85 persons and their cost is Taka 10831 followed by Rangpur division with 82 persons and their cost of Taka 9465 and the lowest number of required labourers is in Barisal division with 47 persons and their cost is Taka 6734. The average number of required labourers is higher in the summer season which is 75 persons & their cost is Taka 9836 compared to a lower average number of required is labourers in the winter season which is 71 persons and their cost is Taka 9326.

Chapter-6

Production and Production Value

Production and Production Value

The estimated per kilogram production value (Tk), per acre production (kilogram) and per acre production value (Tk) by division, tenureship and varieties of chilli productivity in Bangladesh have been presented in this chapter.

Table-6.1: Per kg production value (Tk), per acre production (Kg) & value (Tk.) by season and division

Division	Per Kg Production cost (Tk) , per acre production cost and quantity (Kg)								
	All Areas			Summer			Winter		
	Per Kg production value (Tk.)	Per acre production		Per Kg production value (Tk.)	Per acre production		Per Kg production value (Tk.)	Per acre production	
		Value (Tk.)	Qty. (Kg)		Value (Tk.)	Qty. (Kg)		Value (Tk.)	Qty. (Kg)
All	111.18	99059	891.0	105.66	97768	925.3	115.43	100001	866.3
Barisal	117.52	68340	581.5	-	-	-	117.52	68340	581.5
Chittagong	128.36	107887	840.5	131.90	95403	723.3	126.60	115431	911.8
Dhaka	120.32	97763	812.5	114.56	91686	800.3	124.78	102698	823.0
Khulna	93.35	104072	1114.8	90.81	106568	1173.5	107.81	93504	867.3
Rajshahi	100.66	106479	1057.8	95.48	109896	1151.0	103.65	104739	1010.5
Rangpur	101.56	93485	920.5	104.37	91953	881.0	98.62	95171	965.0
Sylhet	149.13	100334	672.8	142.00	79236	558.0	149.17	100464	673.5

Table-6.1 shows the per kilogram production value (Tk.), per acre production (Kg) and per acre production value (Tk.) by season and division. The average per acre production value, per acre kilogram production and per kilogram production value of chilli crop in Bangladesh are estimated at Taka 99059, 891.0 kilograms and Taka 111.18 respectively. The highest per acre production value of Taka 107887 and per acre production kilogram of 128.36 kilogram is found in Chittagong division. It is seen that the average per kilogram production and per acre production value (Tk.) in summer season is significantly lower than that in winter season.

Table-6.2: Per kg production value (Tk), per acre production (Kg) & value (Tk.) by season and tenancy

Tenancy	All Areas			Summer			Winter		
	Per Kg production Value (Tk.)	Per acre production		Per Kg production Value (Tk.)	Per acre production		Per Kg production Value (Tk.)	Per acre production	
		Qty. (Kg.)	Value (Tk.)		Qty. (Kg.)	Value (Tk.)		Qty. (Kg.)	Value (Tk.)
All	111.18	891.0	99059	105.66	925.3	97768	115.41	866.5	100001
Owned	112.33	881.3	98999	107.69	900.0	96920	115.46	869.5	100389
All other	108.20	917.8	99220	101.55	982.0	99723	115.20	857.3	98757

The above table-6.2 shows the per kilogram production value (Tk.), per acre production (Kg) and value (Tk.) by tenancy. It shows that, the average per acre production value (Tk.), per acre production quantity (kilogram) and per kilogram production value (Tk.) of chilli crop in all other tenureship are estimated at Taka 99220, 917.8 kilogram and Taka

108.20 respectively, whereas for owned land tenureship these are estimated at Taka 98999, 881.3 kilograms and Taka 112.33 respectively. It is seen from the table that per acre production (kilogram) and value (Tk.) is significantly different in the two seasons.

Table-6.3: Per kg production value (Tk), per acre production (Kg) and value (Tk) by season and variety of chilli

Varieties of chilli	All Areas			Summer			Winter		
	Per Kg production Value (Tk.)	Per acre production		Per Kg production Value (Tk.)	Per acre production		Per K production Value (Tk.)	Per acre production	
		Qty. (Kg.)	Value (Tk.)		Qty. (Kg.)	Value (Tk.)		Qty. (Kg.)	Value (Tk.)
All	111.18	891.0	99059	105.66	925.3	97768	115.41	866.5	100001
Local	112.44	841.0	94562	104.49	884.5	92417	118.65	810.0	96109
Hybrid	106.39	1132.0	120430	108.61	1187.0	128920	105.23	1105.3	116313
Others	112.53	874.0	98354	110.71	900.5	99693	126.18	718.0	90599

It is seen from table-6.3 that the highest per acre yield rate of hybrid chilli is 1132.0 kilograms and its value is recorded at Taka 120430, followed by other variety chilli (874.0 kilograms) with its value of Taka 98354. The lowest per kilogram production value in hybrid chillis only Taka 106.39. The highest per kilogram production value is found in others variety which is Taka 112.53. Per acre yield rate of hybrid chillis 1187.0 kilograms in summer season with its value of Taka 128920, followed by other variety (900.5 kilograms) with its value at Taka 99693. Per acre yield rate of hybrid chillis 1105.3 kilograms in winter season with its value of Taka 116313, followed by local variety (810.0 kilograms) with its value at Taka 96109. Per acre yield rate and its value for each chilli variety are significantly different between summer and winter season.

Table-6.4: Per acre benefit cost ratio of chilli crop by season and division

Division	All Areas			Summer			Winter		
	Per acre production		Benefit cost ratio	Per acre production		Benefit cost ratio	Per acre production		Benefit cost ratio
	Cost (Tk.)	Value (Tk.)		Cost (Tk.)	Value (Tk.)		Cost (Tk.)	Value (Tk.)	
All	45242	99059	2.19	45899	97768	2.13	44762	100001	2.23
Barisal	31553	68340	2.17	-	-	-	31553	68340	2.17
Chittagong	47878	107887	2.25	44368	95403	2.15	49999	115431	2.31
Dhaka	45424	97763	2.15	44487	91686	2.06	46185	102698	2.22
Khulna	49449	104072	2.10	51420	106568	2.07	41101	93504	2.27
Rajshahi	49205	106479	2.16	52150	109896	2.11	47706	104739	2.20
Rangpur	41811	93485	2.24	40171	91953	2.29	43617	95171	2.18
Sylhet	41673	100334	2.41	35703	79236	2.22	41710	100464	2.41

Per acre benefit cost ratio of chilli crop by season and division has been presented in the table-6.4. It is observed that the highest benefit cost ratio is in Sylhet division which is 2.41 followed by Chittagong division with 2.25 and the lowest benefit cost ratio is in Khulna division with 2.10 respectively.

Table-6.5: Per acre benefit cost ratio of Chilli crops by season and varieties

Varieties of chlli	All Areas			Summer			Winter		
	Per acre production		Benefit cost ratio	Per acre production		Benefit cost ratio	Per acre production		Benefit cost ratio
	Cost (Tk.)	Value (Tk.)		Cost (Tk.)	Value (Tk.)		Cost (Tk.)	Value (Tk.)	
All	45242	99059	2.19	45899	97768	2.13	44762	100001	2.23
Local	43712	94562	2.16	54554	92417	1.69	43109	96109	2.23
Hybrid	51963	120430	2.32	54285	128920	2.37	50837	116313	2.29
Others	46468	98354	2.12	45436	99693	2.19	52446	90599	1.73

Table-6.5 exposes the benefit cost ratio of the cost by varieties of chilli in both seasons of summer and winter. It is the most significant component of production because it determines whether the producer will continue the production of the respective crop or not. If the benefit cost ratio of a chilli crop is greater than one it means that the producer will be benefited and he will be interested to continue the production of the crop; and if it is less than one it means that the producer will be looser and he will quit the production of the crop. It is evident from the table that benefit cost ratio of chilli crop at national level is 2.19 in summer season is 2.13 and in winter is 2.23. This means that the benefit cost ratio is greater than one in both the seasons and farmers get some profit from the production of chilli. At the national level the highest benefit cost ratio is 2.32 for hybrid chilli and minimum/lowest benefit cost ratio of 2.12 in other variety chilli.

Chapter-7

Sampling Error and Data Reliability

Sampling Error and Data Reliability

Using the Random Group Method the estimating variance of R, the following formula is used:

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

Where: R= the estimated average production cost

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

K = the number of random group

Table-7.1: Estimated per acre production cost (excluding leasing value) for the year 20143 & their standard errors by division

Division	Production Cost (Tk)	Standard Error	Relative Standard Error (%)
All	45242	3.454	0.00763
Barisal	31553	3.923	0.01243
Chittagong	47878	10.935	0.02284
Dhaka	45424	4.207	0.00926
Khulna	49449	5.287	0.01069
Rajshahi	49205	1.772	0.00360
Rangpur	41811	4.253	0.01017
Sylhet	41673	4.035	0.00968

The table shows that the average production cost per acre for Chittagong division of 102.96 taka is significantly different from the 31553 taka average production for Barisal division at 95% confidence interval. Similarly, the average production cost per acre for Khulna division 49449 taka is significantly different from the 41673 taka average production cost per acre for Sylhet division at 95% confidence interval. On the other hand the average production cost per acre for Sylhet division of 74.75 taka is significantly different from the 31553 taka average production cost per acre for Barisal division at 95% confidence interval.

Although the estimated per acre production cost for Chittagong division is subject to the higher standard error than for Rajshahi division. Similarly, the estimated production cost per acre for Barisal division is also subject to the higher standard error than for Rajshahi division. Production cost per acre for all estimates have acceptable reliability in terms of sampling error.

Table-7.2: Estimated per acre production value (excluding leasing value) for the year 2014 and their standard errors by division

Division	Production Value (Tk)	Standard Error	Relative Standard Error (%)
All	99059	4.783	0.00483
Barisal	68340	8.333	0.1219
Chittagong	107887	41.79	0.03873
Dhaka	97763	7.712	0.00789
Khulna	104072	36.280	0.03486
Rajshahi	106479	14.604	0.01372
Rangpur	93485	16.915	0.01809
Sylhet	100334	10.153	0.01012

The estimated average production cost per acre for Dhaka division of 97763 taka is significantly different from the 68340 taka average production value Barisal division at 95% confidence interval. The highest average production value for Chittagong division of 107887 taka is significantly different from Barisal division at 95% confidence interval. However, the estimated average production cost per acre for Barisal division is subject to lower than that of all other division. Production value per acre for all estimates has acceptable reliability in terms of sampling error.

Annex

Annex - A: Statistical Table
Annex - B: Concepts and Definitions
Annex - C: Questionnaire (Bangla)
Annex - D: Questionnaire (English)
Annex - E: Reference

Annex-A: Statistical Table

Table-1: Distribution of chilli cultivation area (acre) by tenancy and division

Division	Tenancy					
	Total	Owned	Share crop	Mortgage	Lease	Other
1	2	3	4	5	6	7
All						
Bangladesh	434757	330910	33270	22862	41231	6485
Barisal	31546	22693	1791	516	6518	29
Chittagong	84683	52052	17591	1653	7279	6109
Dhaka	112450	82026	6223	11146	12958	97
Khulna	42405	33075	1056	1837	6371	67
Rajshahi	77406	63167	4567	5508	4164	0
Rangpur	77316	69994	1541	1945	3767	68
Sylhet	8950	7902	501	257	174	116
Summer						
Total	183284	135142	14503	12781	18859	1999
Barisal	-	-	-	-	-	-
Chittagong	31896	19523	8585	741	1156	1891
Dhaka	50400	34553	1574	6423	7849	-
Khulna	34305	25812	1000	1601	5852	40
Rajshahi	26114	18701	2301	2622	2491	-
Rangpur	40514	36500	1043	1392	1511	68
Sylhet	55	55	-	-	-	-
Winter						
Total	251473	195767	18767	10081	22371	4486
Barisal	31546	22693	1791	516	6518	29
Chittagong	52787	32529	9006	912	6122	4217
Dhaka	62051	47474	4649	4723	5109	97
Khulna	8100	7264	56	235	519	27
Rajshahi	51292	44467	2266	2886	1673	-
Rangpur	36802	33494	498	553	2256	-
Sylhet	8896	7847	501	257	174	116

Table-2: Distribution of number household's cultivation chilli by tenancy & division

Division	Tenancy					
	Total	Owned	Share crop	Mortgage	Lease	Other
1	2	3	4	5	6	7
All						
Bangladesh	2575605	2079894	220583	109272	192041	27058
Barisal	195442	163052	12119	3305	18729	661
Chittagong	610175	405423	116321	14965	63943	21087
Dhaka	656450	537635	47526	43070	40100	2228
Khulna	242210	200238	6684	9624	30744	1069
Rajshahi	344733	290892	20916	25177	21304	-
Rangpur	389090	357588	10217	10643	14900	851
Sylhet	137506	125066	6801	2488	2322	1161
Summer						
Total	930440	741379	78139	54816	78698	6415
Barisal	-	-	-	-	-	-
Chittagong	161897	104077	44216	3401	9523	4762
Dhaka	253223	204955	9654	23763	24505	-
Khulna	166820	130195	6149	8020	26199	802
Rajshahi	126660	100321	10458	12395	11233	-
Rangpur	220513	200505	7663	7237	7237	851
Sylhet	1327	1327	-	-	-	-
Winter						
Total	1645165	1338515	142444	54456	113343	20643
Barisal	195442	163052	12119	3305	18729	661
Chittagong	448278	301346	72105	11564	54419	16326
Dhaka	403226	332680	37872	19307	15594	2228
Khulna	75390	70043	535	1604	4545	267
Rajshahi	218072	190571	10458	12782	10071	-
Rangpur	168577	157083	2554	3406	7663	-
Sylhet	136179	123739	6801	2488	2322	1161

Table-3: Distribution of area (acre) under varieties of chilli by division and farming time

Division	Varieties of chlli			
	Total	Local	Hybrid	Others
1	2	3	4	5
All				
Bangladesh	434757	343838	72900	18020
Barisal	31546	30993	485	68
Chittagong	84683	58528	18101	8054
Dhaka	112450	97636	14369	446
Khulna	42405	18679	22326	1401
Rajshahi	77406	67730	5508	4168
Rangpur	77316	62987	10728	3601
Sylhet	8950	7285	1383	282
Summer				
Total	183284	144113	23805	15366
Barisal	-	-	-	-
Chittagong	31896	22849	2837	6211
Dhaka	50400	46724	3230	446
Khulna	34305	18094	15236	976
Rajshahi	26114	21242	740	4133
Rangpur	40514	35150	1762	3601
Sylhet	55	55	-	-
Winter				
Total	251473	199724	49095	2654
Barisal	31546	30993	485	68
Chittagong	52787	35679	15265	1843
Dhaka	62051	50912	11139	-
Khulna	8100	585	7090	425
Rajshahi	51292	46489	4768	35
Rangpur	36802	27837	8965	-
Sylhet	8896	7230	1383	282

Table-4: Distribution of households under varieties of chilli by division and farming time

Division	Varieties of chilli			
	Total	Local	Hybrid	Others
1	2	3	4	5
All				
Bangladesh	2575605	2081186	394238	100180
Barisal	195442	189713	5068	661
Chittagong	610175	444877	98635	66664
Dhaka	656450	588874	66833	743
Khulna	242210	106401	124580	11228
Rajshahi	344733	298252	36410	10071
Rangpur	389090	339283	42144	7663
Sylhet	137506	113787	20568	3152
Summer				
Total	930440	737196	121705	71539
Barisal	-	-	-	-
Chittagong	161897	108158	8843	44896
Dhaka	253223	227233	25248	743
Khulna	166820	85014	73251	8555
Rajshahi	126660	111554	5423	9684
Rangpur	220513	203910	8940	7663
Sylhet	1327	1327	-	-
Winter				
Total	1645165	1343990	272533	28641
Barisal	195442	189713	5068	661
Chittagong	448278	336719	89792	21768
Dhaka	403226	361641	41585	-
Khulna	75390	21387	51329	2673
Rajshahi	218072	186698	30987	387
Rangpur	168577	135373	33205	-
Sylhet	136179	112460	20568	3152

Table-5: Distribution of area (acre) & number of households by cultivation type and farming time & division

Division	Type of cultivation					
	Total		**Single**		**Mixed**	
	Area	Household	Area	Household	Area	Household
1	2	3	4	5	6	7
All						
Bangladesh	434757	2575605	352926	2157798	81831	417807
Barisal	31546	195442	27917	170763	3629	24678
Chittagong	84683	610175	72371	528546	12312	81629
Dhaka	112450	656450	83586	530209	28864	126240
Khulna	42405	242210	34554	193287	7852	48923
Rajshahi	77406	344733	60336	268039	17070	76693
Rangpur	77316	389090	65775	340560	11541	48530
Sylhet	8950	137506	8388	126393	562	11113
Summer						
Total	183284	930440	129519	692864	53765	237576
Barisal	-	-	-	-	-	-
Chittagong	31896	161897	23257	122443	8639	39454
Dhaka	50400	253223	30580	169311	19820	83913
Khulna	34305	166820	29750	139017	4555	27803
Rajshahi	26114	126660	13421	75919	12693	50742
Rangpur	40514	220513	32468	185180	8046	35333
Sylhet	55	1327	43	995	12	332
Winter						
Total	251473	1645165	223407	1464934	28066	180230
Barisal	31546	195442	27917	170763	3629	24678
Chittagong	52787	448278	49113	406103	3673	42175
Dhaka	62051	403226	53006	360899	9045	42328
Khulna	8100	75390	4804	54270	3296	21120
Rajshahi	51292	218072	46915	192121	4377	25952
Rangpur	36802	168577	33307	155381	3495	13197
Sylhet	8896	136179	8345	125398	551	10782

Table-6: Per acre land preparation cost (Tk.) by division and farming time

Division	Area	Land preparation cost(Tk.)					
		Total cost (Tk.)	Plough/Hoe		Power tiller		Other Cost (Tk.)
			Number	Cost (Tk.)	Number	Cost (Tk.)	
1	2	3	4	5	6	7	8
All							
Bangladesh	434757	4111	6	1186	8	2339	586
Barisal	31546	4904	6	1571	6	3072	261
Chittagong	84683	4686	7	1681	8	2416	588
Dhaka	112450	3759	6	671	10	2305	783
Khulna	42405	4091	5	893	8	2654	544
Rajshahi	77406	3840	5	905	8	2390	544
Rangpur	77316	3990	7	1580	7	1906	505
Sylhet	8950	3781	10	2015	8	1245	521
Summer							
Total	183284	3990	5	1016	8	2363	611
Barisal	-	-	-	-	-	-	-
Chittagong	31896	3719	4	795	5	2346	577
Dhaka	50400	4124	6	892	9	2423	809
Khulna	34305	3836	4	873	8	2411	551
Rajshahi	26114	4152	4	787	10	2611	754
Rangpur	40514	4067	6	1610	7	2106	351
Sylhet	55	2121	8	1636	-	-	485
Winter							
Total	251473	4199	7	1310	9	2321	568
Barisal	31546	4904	6	1571	6	3072	261
Chittagong	52787	5270	9	2216	10	2459	595
Dhaka	62051	3463	6	492	11	2209	761
Khulna	8100	5171	9	975	8	3685	511
Rajshahi	51292	3681	6	966	8	2278	437
Rangpur	36802	3906	7	1547	6	1685	674
Sylhet	8896	3791	10	2017	8	1253	521

Table-7: Per acre seed and seed related cost (Tk.) by division and farming time

Division	Total cost (Tk.)	Seed		Seedbed	Sowing	Irrigation	Weeding
		Qty. (Kg.)	Value (Tk.)				
All							
All	2808	618	1144	400	263	329	672
Barisal	2820	84	1136	983	337	188	177
Chittagong	2409	651	914	407	342	297	449
Dhaka	3023	785	1254	325	174	312	957
Khulna	2064	228	843	417	155	284	366
Rajshahi	3713	837	1386	264	430	578	1056
Rangpur	2391	550	1198	356	172	211	454
Sylhet	3140	635	836	689	250	425	939
Summer							
Average	1973	523	727	373	166	291	415
Barisal	-	-	-	-	-	-	-
Chittagong	2207	627	945	401	457	201	204
Dhaka	2224	752	917	400	68	249	590
Khulna	1962	176	749	439	150	269	355
Rajshahi	1514	583	351	226	67	518	352
Rangpur	1781	414	544	354	139	287	457
Sylhet	1706	100	482	1224	-	-	-
Winter							
Average	3417	687	1448	420	334	357	858
Barisal	2820	84	1136	983	337	188	177
Chittagong	2531	667	895	411	273	356	597
Dhaka	3672	811	1528	265	259	364	1256
Khulna	2497	446	1237	323	176	349	412
Rajshahi	4833	966	1912	283	615	609	1414
Rangpur	3064	700	1918	357	209	128	451
Sylhet	3148	638	838	686	251	428	945

Table-8: Per acre number of Labour engaged in raising & their cost (Tk.) and product market Value (Tk.) for seedling by division & farming time

Division	Market value (Tk.) for seedling	Number of Labour & their raising cost (Tk.)				
		Family (Number)		Hired(Number)		Cost (Tk.)
		Male	Female	Male	Female	
1	2	3	4	5	6	7
All						
All	3530	2.34	0.68	0.86	0.29	639
Barisal	3796	2.97	0.56	0.94	0.06	798
Chittagong	3746	2.66	1.46	0.57	1.15	648
Dhaka	3052	1.72	0.71	0.57	0.01	587
Khulna	4510	2.06	0.52	1.44	0.09	582
Rajshahi	2450	2.67	0.02	1.24	0.03	639
Rangpur	4240	1.94	0.40	0.75	0.23	632
Sylhet	5143	6.62	2.04	1.72	0.24	956
Summer						
Average	3872	1.96	0.40	0.82	0.08	494
Barisal	-	-	-	-	-	-
Chittagong	2809	1.71	0.66	0.19	0.04	542
Dhaka	3453	1.62	0.41	0.53	0.03	458
Khulna	4812	1.70	0.20	1.49	0.03	564
Rajshahi	5228	2.45	0.01	1.36	0.09	338
Rangpur	3560	2.45	0.60	0.75	0.22	542
Sylhet	3636	21.21	3.03	-	-	742
Winter						
Average	3282	2.61	0.88	0.88	0.44	744
Barisal	3796	2.97	0.56	0.94	0.06	798
Chittagong	4312	3.23	1.95	0.80	1.82	712
Dhaka	2726	1.80	0.96	0.60	-	692
Khulna	3230	3.60	1.88	1.22	0.33	660
Rajshahi	1036	2.79	0.02	1.18	-	793
Rangpur	4988	1.39	0.17	0.75	0.23	730
Sylhet	5152	6.53	2.03	1.73	0.24	957

Table-9: Per acre number of labour engaged in plantation& their cost and purchase cost (Tk.) for seedling by division and farming time

Division	Total Cost (Tk.)	Plantation cost (Tk.)					Purchase cost (Tk.)	Others cost (Tk.)
		Family (Number)		Hired (Number)		Cost (Tk.)		
		Male	Female	Male	Female			
1	2	3	4	5	6	7	8	9
All								
All	3577	7.89	1.39	5.83	1.70	1959	1272	346
Barisal	3726	10.66	1.15	8.29	0.29	2093	1503	131
Chittagong	4239	7.13	2.35	3.41	4.22	1941	1846	452
Dhaka	4247	8.55	1.88	4.85	0.18	2339	1243	665
Khulna	3584	9.80	0.80	9.32	0.11	2195	1178	211
Rajshahi	2183	6.31	0.16	7.17	0.01	1398	690	95
Rangpur	3326	6.65	1.21	6.00	4.48	1863	1259	204
Sylhet	2567	12.23	2.22	2.69	0.04	1440	985	142
Summer								
Average	4153	7.63	1.20	7.64	1.89	2231	1559	363
Barisal	-	-	-	-	-	-	-	-
Chittagong	4253	6.80	2.28	2.86	0.62	2071	1892	290
Dhaka	5410	6.84	1.39	7.13	0.25	2543	2103	763
Khulna	3648	9.02	0.52	10.80	0.09	2249	1190	209
Rajshahi	2703	7.06	0.01	10.86	0.01	1665	931	107
Rangpur	3878	8.44	1.43	7.30	7.65	2318	1341	219
Sylhet	1964	12.12	12.12	-	-	1964	-	-
Winter								
Average	3157	8.07	1.53	4.50	1.56	1761	1063	334
Barisal	3726	10.66	1.15	8.29	0.29	2093	1503	131
Chittagong	4231	7.33	2.40	3.74	6.39	1863	1818	550
Dhaka	3302	9.93	2.27	2.99	0.12	2173	545	585
Khulna	3314	13.10	1.98	3.04	0.17	1966	1128	220
Rajshahi	1919	5.93	0.23	5.29	-	1262	568	89
Rangpur	2718	4.67	0.96	4.57	0.98	1362	1169	188
Sylhet	2570	12.23	2.16	2.70	0.04	1436	991	143

Table-10: Per acre number of labour engaged in weeding & their cost (Tk.) and irrigation cost (Tk.) by division and farming time

Division	Weeding					Irrigation		
	Family (Number)		Hired (Number)		Cost (Tk.)	Irrigation (Tk.)	Irrigation related (Tk.)	Total cost (Tk.)
	Male	Female	Male	Female				
1	2	3	4	5	6	7	8	
All								
All	8.10	0.58	17.66	0.78	5175	3078	477	3555
Barisal	5.30	0.03	7.88	0.01	2836	1184	283	1467
Chittagong	7.09	0.90	22.46	1.55	6418	3638	507	4145
Dhaka	10.22	1.29	16.54	0.66	5094	3466	435	3901
Khulna	6.46	0.05	26.03	0.30	5593	3959	737	4695
Rajshahi	7.73	0.09	17.96	0.05	6389	2697	341	3038
Rangpur	8.28	0.24	14.50	1.48	3573	2591	590	3180
Sylhet	10.23	0.19	5.87	0.09	4052	2916	378	3294
Summer								
Average	70.71	0.62	30.33	1.39	5671	3358	426	3784
Barisal	-	-	-	-	-	-	-	-
Chittagong	7.57	1.17	46.28	2.77	7348	3130	313	3443
Dhaka	15.15	1.12	26.14	1.47	4777	3591	316	3907
Khulna	6.24	0.04	31.16	0.29	6156	4092	773	4865
Rajshahi	10.44	0.12	35.38	-	8149	2917	260	3177
Rangpur	11.65	0.39	19.04	1.99	3460	2913	466	3379
Sylhet	-	-	15.15	15.15	1773	2273	152	2424
Winter								
Average	6.19	0.55	8.43	0.33	4814	2874	514	3388
Barisal	5.30	0.03	7.88	0.01	2836	1184	283	1467
Chittagong	6.80	0.73	8.07	0.81	5857	3945	624	4568
Dhaka	6.22	1.44	8.74	-	5351	3365	532	3897
Khulna	7.36	0.10	4.32	0.33	3205	3393	584	3977
Rajshahi	6.34	0.08	9.10	0.08	5493	2585	383	2968
Rangpur	4.56	0.08	9.50	0.91	3698	2236	726	2962
Sylhet	10.29	0.19	5.82	-	4066	2920	380	3299

Table-11: Per acre pesticide and insecticide cost (Tk.) by division and farming time

Division	Total Cost (Tk.)	Pesticide Cost (Tk.)			Insecticide cost (Tk.)		
		1st time	2nd time	Others	1st time	2nd time	Others
1	2	3	4	5	6	7	8
All							
All	3398	846	627	412	705	438	371
Barisal	2491	1058	312	55	736	276	53
Chittagong	3419	871	703	389	592	529	335
Dhaka	3150	766	694	438	674	305	272
Khulna	3937	781	590	821	595	521	629
Rajshahi	3997	942	763	325	918	606	444
Rangpur	3165	820	462	376	689	386	432
Sylhet	3813	569	612	696	844	422	670
Summer							
Average	3310	775	675	454	602	442	362
Barisal	-	-	-	-	-	-	-
Chittagong	3269	646	856	321	644	543	258
Dhaka	2565	615	752	400	394	236	169
Khulna	4107	827	577	897	598	530	678
Rajshahi	4419	968	875	344	923	767	541
Rangpur	2881	907	391	323	623	337	299
Sylhet	2273	694	367	152	530	379	152
Winter							
Average	3463	898	592	382	780	435	377
Barisal	2491	1058	312	55	736	276	53
Chittagong	3510	1007	610	430	561	520	381
Dhaka	3625	889	646	470	902	361	356
Khulna	3217	585	646	499	586	482	419
Rajshahi	3783	929	705	315	916	523	395
Rangpur	3476	725	539	435	761	440	577
Sylhet	3822	568	614	700	845	422	673

Table-12: Per acre type of fertilizer used (kg) and price (Tk.) by division and farming time

Division	Total value	Urea		TSP		DAP		MOP		Cake		Cow dung (Tk.)	Others (Tk).
		Qty (kg)	Price (Tk.)	Qty (kg)	Price (Tk.)	Qty (kg)	Price (Tk.)	Qty (kg)	Price (Tk.)	Qty (kg)	Price (Tk.)		
1	2	3	4	5	6	7	8	9	10	11	12		
All													
All	9251	137	2469	84	2233	37	1091	46	768	6	162	1735	792
Barisal	3754	60	1125	54	1497	6	174	15	316	1	18	460	164
Chittagong	9710	200	3613	124	3472	13	324	33	614	3	62	936	689
Dhaka	8748	131	2394	72	1907	41	1281	44	750	6	180	1389	847
Khulna	10966	164	2935	104	2627	70	1976	62	926	9	239	1226	1036
Rajshahi	10896	161	2818	83	2246	64	1893	69	1143	11	301	1860	635
Rangpur	9078	78	1386	61	1503	31	854	48	707	4	99	3448	1081
Sylhet	9733	82	1468	65	1543	5	119	31	582	10	364	4663	995
Summer													
Average	9202	139	2542	80	2101	42	1208	52	803	7	201	1600	748
Barisal	-	-	-	-	-	-	-	-	-	-	-	-	-
Chittagong	8335	210	3807	101	2894	6	135	20	328	*	1	577	594
Dhaka	7790	129	2383	79	2007	30	898	47	730	8	217	872	682
Khulna	11664	168	3048	106	2701	83	2355	66	976	8	225	1305	1055
Rajshahi	11648	151	2660	63	1723	89	2641	81	1323	19	551	2138	611
Rangpur	7981	65	1236	54	1331	19	544	54	784	3	95	3212	778
Sylhet	10048	161	2524	142	2448	-	-	45	712	-	-	3758	606
Winter													
Average	9286	136	2417	87	2329	34	1006	42	743	5	133	1833	824
Barisal	3754	60	1125	54	1497	6	174	15	316	1	18	460	164
Chittagong	10541	194	3495	138	3821	17	439	41	787	4	98	1154	747
Dhaka	9526	133	2403	66	1826	49	1593	41	766	4	150	1809	980
Khulna	8011	149	2456	95	2316	16	372	46	716	10	299	893	960
Rajshahi	10514	167	2899	94	2512	52	1512	63	1052	7	174	1718	647
Rangpur	10285	92	1551	69	1691	45	1195	40	621	4	105	3707	1415
Sylhet	9731	81	1462	65	1537	5	120	31	581	10	367	4668	997

Table-13: Per acre type of harmone used (kg) and Price (Tk.) by division farming time

Division	Total Cost (Tk.)	Ocuzim		Ithril		Others cost (Tk.)
		Qty. (Mg)	Cost (Tk.)	Qty. (Mg)	Cost (Tk.)	
1	2	3	4	5	6	7
All						
All	690	284	344	125	154	192
Barisal	548	76	148	207	388	12
Chittagong	649	283	354	206	145	150
Dhaka	618	341	371	77	40	208
Khulna	632	148	244	134	217	171
Rajshahi	815	305	341	109	259	216
Rangpur	799	349	436	86	90	273
Sylhet	747	213	335	108	183	228
Summer						
Average	726	343	405	84	104	216
Barisal	-	-	-	-	-	-
Chittagong	767	191	422	61	161	184
Dhaka	708	462	364	133	48	297
Khulna	752	173	281	164	262	208
Rajshahi	639	382	484	16	52	103
Rangpur	749	435	499	19	30	220
Sylhet	909	303	364	-	-	545
Winter						
Average	664	241	300	155	190	175
Barisal	548	76	148	207	388	12
Chittagong	577	339	313	293	135	130
Dhaka	546	243	376	32	34	136
Khulna	125	46	86	7	27	12
Rajshahi	905	266	268	156	364	273
Rangpur	853	254	366	160	156	331
Sylhet	746	213	335	109	185	226

Table-14: Per acre number of labour engaged in harvesting and their cost (Tk.), transport and others cost (Tk.) by division and farming time

Division	Harvesting					Transport cost (Tk.)	Others cost (Tk.)
	Family (Number)		Hired(Number)		Cost (Tk.)		
	Male	Female	Male	Female			
1	2	3	4	5	6	7	8
All							
All	17	12	14	30	9541	1765	693
Barisal	21	10	10	6	6734	887	536
Chittagong	14	8	7	32	8599	2088	866
Dhaka	17	21	9	34	10064	1595	560
Khulna	10	9	27	19	10307	2116	883
Rajshahi	15	4	26	40	10831	2259	603
Rangpur	22	17	11	32	9465	1388	765
Sylhet	32	12	3	8	7640	1279	509
Summer							
Average	15	12	16	32	9836	1898	796
Barisal	-	-	-	-	-	-	-
Chittagong	9	6	8	41	8098	1631	753
Dhaka	16	22	11	34	10164	1518	691
Khulna	9	6	29	18	10677	2241	949
Rajshahi	17	5	25	44	11127	3251	1033
Rangpur	22	15	11	28	9252	1420	679
Sylhet	24	24	-	-	8591	909	121
Winter							
Average	18	12	12	29	9326	1668	617
Barisal	21	10	10	6	6734	887	536
Chittagong	18	8	7	27	8901	2365	934
Dhaka	17	20	6	33	9984	1657	454
Khulna	16	21	18	25	8738	1583	602
Rajshahi	13	3	26	39	10680	1753	384
Rangpur	22	18	11	36	9700	1351	861
Sylhet	32	12	3	8	7635	1281	511

Table-15.a: Per acre production cost (Tk.) by division and farming time

Division	Per acre production Cost (taka)											
	Total	Land Preparation	Seed & seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ insecticide	Fertilizer	Harmone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
All	45242	4111	3447	3577	5175	3555	3398	9251	728	9541	1765	693
Barisal	31553	4904	3618	3726	2836	1467	2491	3754	600	6734	887	536
Chittagong	47878	4686	3058	4239	6418	4145	3419	9710	650	8599	2088	866
Dhaka	45424	3759	3610	4247	5094	3901	3150	8748	696	10064	1595	560
Khulna	49449	4091	2646	3584	5593	4695	3937	10966	632	10307	2116	883
Rajshahi	49205	3840	4352	2183	6389	3038	3997	10896	817	10831	2259	603
Rangpur	41811	3990	3023	3326	3573	3180	3165	9078	857	9465	1388	765
Sylhet	41673	3781	4095	2567	4052	3294	3813	9733	911	7640	1279	509
Summer												
Average	45899	3990	2467	4153	5671	3784	3310	9202	791	9836	1898	796
Barisal	-	-	-	-	-	-	-	-	-	-	-	-
Chittagong	44368	3719	2749	4253	7348	3443	3269	8335	769	8098	1631	753
Dhaka	44487	4124	2682	5410	4777	3907	2565	7790	860	10164	1518	691
Khulna	51420	3836	2525	3648	6156	4865	4107	11664	752	10677	2241	949
Rajshahi	52150	4152	1852	2703	8149	3177	4419	11648	639	11127	3251	1033
Rangpur	40171	4067	2323	3878	3460	3397	2881	7981	850	9252	1420	679
Sylhet	35703	2121	2448	1964	1773	2424	2273	10048	3030	8591	909	121
Winter												
Average	44762	4199	4161	3157	4814	3388	3463	9286	683	9326	1668	917
Barisal	31553	4904	3618	3726	2436	1467	2491	3754	600	6734	887	536
Chittagong	49999	5270	3244	4231	5857	4568	3510	10541	579	8901	2365	934
Dhaka	46185	3463	4364	3302	5351	3897	3625	9526	563	9984	1657	454
Khulna	41101	5171	3157	3314	3205	3977	3217	8011	125	8738	1583	602
Rajshahi	47706	3681	5625	1919	5493	2968	3783	10514	907	10680	1753	384
Rangpur	43617	3906	3794	2718	3698	2962	3476	10285	865	9700	1351	861
Sylhet	41710	3791	4106	2570	4066	3299	3822	9731	898	7635	1281	511
Total												

Table-15.b: Per acre production quantity (Kg) & their value (Tk.) by division and farming time

.Division	Total Value (Tk.)	Per acre production quantity (Kg.) and value (Tk.)					
		Seedling		Green		Dry	
		Qty.(Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)
1	2	3	4	5	6	7	8
All							
All	99059	3588	823	2268	56771	324	41466
Barisal	68340	3605	976	94	3595	558	63769
Chittagong	107887	5253	1191	1242	37523	530	69173
Dhaka	97763	1141	350	1954	56233	324	41180
Khulna	104072	3202	1114	4347	98275	28	4684
Rajshahi	106479	1028	259	3319	75628	228	30592
Rangpur	93485	6882	1071	2678	61242	251	31173
Sylhet	100334	14034	4093	1099	34703	398	61538
Summer							
Average	97768	4681	935	2633	63762	267	33071
Barisal	-	-	-	-	-	-	-
Chittagong	95403	7302	1312	281	16255	653	77836
Dhaka	91686	2436	741	2537	72031	166	18914
Khulna	106568	3590	1267	4634	102932	15	2368
Rajshahi	109896	2705	571	4084	87670	130	21655
Rangpur	91953	7615	832	1976	42330	387	48791
Sylhet	79236	303	455	1324	41403	227	37379
Winter							
Average	100001	2791	741	2002	51675	366	47584
Barisal	68340	3605	976	94	3595	558	63769
Chittagong	115431	4014	1119	1823	50374	456	63939
Dhaka	102698	89	32	1480	43402	453	59264
Khulna	93504	1556	465	3133	78549	84	14490
Rajshahi	104739	174	100	2930	69498	278	35142
Rangpur	95171	6075	1333	3452	82061	102	11777
Sylhet	100464	14119	4116	1098	34661	399	61687

Table-16.a: Per acre production cost (Tk.) for local variety by division and farming time

Division	Per acre production Cost (Tk)											
	Total	Land Preparation	Seed & seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ insecticide	Fertilizer	Harmone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
All	43714	3934	3390	3210	5173	3460	3286	8963	702	9378	1601	619
Barisal	31248	4868	3578	3698	2836	1409	2471	3711	600	6680	863	534
Chittagong	43954	4001	2699	3575	6705	3874	3293	9206	530	8228	1345	498
Dhaka	44600	3882	3637	3895	5024	4008	2840	8776	708	9743	1507	581
Khulna	52083	4036	1879	3756	6352	4859	3979	11368	503	11959	2226	1165
Rajshahi	48349	3469	4073	1646	6419	3075	4192	10776	873	10856	2400	572
Rangpur	41278	3996	3200	3154	3543	3235	3183	8920	819	9107	1367	756
Sylhet	39477	3645	4002	2632	4276	3436	3362	9239	334	7183	1035	331
Summer												
Average	44554	4049	2267	4040	5473	3782	3240	8799	716	9628	1792	768
Barisal	-	-	-	-	-	-	-	-	-	-	-	-
Chittagong	40286	4038	2238	3804	7213	3613	2980	7891	538	6662	886	422
Dhaka	43260	4208	2631	5469	4679	3787	2437	7358	795	9769	1450	678
Khulna	52434	4000	1880	3693	6425	4907	4042	11509	515	12000	2266	1197
Rajshahi	52716	3881	1383	1966	7889	3609	5072	12236	727	11068	3803	1083
Rangpur	40085	3975	2535	3730	3455	3411	2960	7837	825	9278	1378	700
Sylhet	27767	2121	2448	1964	1773	2424	718	6697	-	8591	909	121
Winter												
Average	43109	3851	4200	2610	4956	3227	3319	9082	691	9198	1462	512
Barisal	31248	4868	3578	3698	2836	1409	2471	3711	600	6680	863	534
Chittagong	46303	3978	2994	3428	6380	4042	3493	10047	524	9230	1640	547
Dhaka	45829	3584	4560	2450	5342	4210	3210	10078	628	9719	1559	492
Khulna	41256	5140	1851	5728	4106	3371	2047	6989	135	10709	998	183
Rajshahi	46354	3280	5302	1499	5748	2832	3789	10108	939	10759	1759	338
Rangpur	42786	4022	4039	2426	3655	3014	3464	10287	812	8890	1352	826
Sylhet	39566	3657	4014	2637	4295	3443	3382	9259	337	7172	1036	333

Table-16.b: Per acre production quantity (Kg) & their value (Tk.) for local variety land by division and farming time

Division	Total Value (Tk.)	Per acre production quantity (Kg.) and value (Tk.)					
		Seedling		Green		Dry	
		Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)
1	2	3	4	5	6	7	8
All							
All	94562	3566	702	1992	50290	343	43570
Barisal	67447	3492	960	83	3049	558	63438
Chittagong	97396	6246	1181	733	27854	527	68361
Dhaka	95115	1308	390	1817	51128	342	43596
Khulna	84010	2179	470	4389	82161	9	1379
Rajshahi	106012	583	155	3186	73545	242	32312
Rangpur	94609	7044	940	2487	60600	267	33069
Sylhet	99936	13844	3556	1044	33219	412	63161
Summer							
Average	92417	5030	842	2774	58191	266	33385
Barisal	-	-	-	-	-	-	-
Chittagong	83087	9890	1532	214	10002	598	71553
Dhaka	89799	2615	774	2548	71166	151	17859
Khulna	83867	2249	486	4460	82538	5	844
Rajshahi	113408	1554	376	3882	87744	150	25288
Rangpur	93700	8619	949	1974	41903	405	50849
Sylhet	79236	303	455	1324	41403	227	37379
Winter							
Average	96109	2511	602	1644	44589	399	50919
Barisal	67447	3492	960	83	3049	556	63438
Chittagong	106559	3912	956	1064	39286	482	66317
Dhaka	99993	109	39	1147	32738	517	67216
Khulna	88427	-	-	2182	70512	121	17916
Rajshahi	102632	140	54	2868	67057	284	35521
Rangpur	95758	5056	930	3134	84210	92	10617
Sylhet	100093	13947	3579	1042	33157	413	63357

Table-17.a: Per acre production cost (Tk.) for hybrid variety by division and farming time

Division	Per acre production Cost (Tk)											
	Total	Land Preparation	Seed & seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ insecticide	Fertilizer	Harmone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
All	51963	5049	3957	4934	4804	4134	4083	10721	787	10140	2411	944
Barisal	46137	6429	5455	4955	2595	4152	3829	5789	655	9495	2155	627
Chittagong	60212	7926	4252	6183	5155	5273	3685	12277	675	8948	4032	1806
Dhaka	50641	2967	3207	6719	5669	3195	5177	8106	628	12348	2189	437
Khulna	46772	4185	3432	3169	4898	4570	3903	10493	772	8862	1905	582
Rajshahi	62287	7191	8579	6454	3751	4052	3975	14371	702	10457	1793	962
Rangpur	46019	3723	2968	3714	3810	2831	3508	10315	1023	11830	1393	903
Sylhet	48557	4244	5094	1929	2385	2362	5782	11538	2699	9289	2102	1132
Summer												
Average	54285	3756	3798	3932	6282	4650	4255	12389	1131	11081	2254	758
Barisal	-	-	-	-	-	-	-	-	-	-	-	-
Chittagong	68266	3878	6280	4809	9727	4017	4408	15403	554	14881	3106	1204
Dhaka	62229	3156	3082	5061	6617	5713	4096	12852	1879	16334	2471	969
Khulna	49920	3718	3454	3228	5747	4834	4280	11714	1080	9158	2115	593
Rajshahi	76815	4661	7265	9238	8702	2594	5708	16991	1455	15793	2450	1958
Rangpur	45492	4612	2638	4300	3731	2988	3469	10593	989	9984	1609	580
Sylhet	-	-	-	-	-	-	-	-	-	-	-	-
Winter												
Average	50837	5676	4034	5420	4087	3884	3999	9912	620	9684	2487	1034
Barisal	46137	6429	5455	4955	2595	4152	3829	5789	655	9495	2155	627
Chittagong	58715	8678	3875	6439	4305	5506	3551	11696	697	7846	4204	1918
Dhaka	47281	2912	3244	7200	5394	2465	5491	6729	265	11192	2107	283
Khulna	10006	5190	3386	3042	3073	4004	3093	7869	110	8227	1455	559
Rajshahi	60033	7583	8783	6022	2982	4279	3706	13965	585	9629	1691	807
Rangpur	46123	3549	3033	3599	3825	2800	3516	10260	1029	12193	1351	967
Sylhet	48557	4244	5094	1929	2385	2362	5782	11538	2699	9289	2102	1132
Total												

Table-17.b: Per acre production quantity (Kg) & their value (Tk.) for hybrid variety by division and farming time

Division	Total Value (Tk.)	Per acre production quantity (Kg.) and value (Tk.)					
		Seedling		Green		Dry	
		Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)
1	2	3	4	5	6	7	8
All							
All	120430	3363	1291	3628	88359	225	30779
Barisal	123253	8409	1873	804	38193	645	83187
Chittagong	139501	2261	951	3293	72499	474	66051
Dhaka	115298	41	83	2905	89956	208	25260
Khulna	120454	4211	1713	4336	111014	46	7728
Rajshahi	126455	450	495	3700	94567	225	31394
Rangpur	93857	7921	2181	4079	71039	169	20937
Sylhet	104891	13100	7566	1282	40882	321	56442
Summer							
Average	128920	3605	1600	3840	101638	227	25683
Barisal	-	-	-	-	-	-	-
Chittagong	140000	204	659	606	23333	1025	116007
Dhaka	116117	184	368	2563	82421	382	33328
Khulna	133049	5413	2277	4856	126455	27	4318
Rajshahi	133073	52	157	4661	100215	266	32702
Rangpur	97114	1208	121	2252	48949	374	48044
Sylhet	-	-	-	-	-	-	-
Winter							
Average	116313	3246	1142	3525	81921	224	33251
Barisal	123253	8409	1873	804	38193	645	83187
Chittagong	139408	2643	1005	3792	81635	371	56768
Dhaka	115060	-	-	3004	92140	157	22920
Khulna	93389	1627	501	3219	77831	86	15057
Rajshahi	125429	511	547	3551	93691	219	31191
Rangpur	93216	9240	2585	4438	75382	129	15249
Sylhet	104891	13100	7566	1282	40882	321	56442

Table-18.a: Per acre production cost (Tk.) for others variety by division and farming time

Division	Per acre production Cost (Tk)											
	Total	Land Preparation	Seed & seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ insecticide	Fertilizer	Harmone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
All	46468	3691	2327	5089	6701	3031	2759	8440	981	10105	2280	1064
Barisal	66503	10194	8852	7587	4677	8710	2032	8839	-	11742	2903	968
Chittagong	48674	2374	2980	4699	7174	35733	3740	7608	1474	10511	3117	1424
Dhaka	44183	2400	5167	1667	1750	3333	4950	16417	-	6833	1667	-
Khulna	56247	3311	298	7896	6539	4513	3924	13145	27	10827	3884	1882
Rajshahi	44672	5440	3308	5275	9296	1080	870	7585	59	10583	563	612
Rangpur	38412	4693	103	5116	3376	3264	1827	8110	1026	8638	1738	520
Sylhet	63079	5001	1600	4009	6426	4203	5481	12964	6456	11374	3529	2035
Summer												
Average	45436	3802	2280	5557	6552	2466	2504	8011	947	9855	2340	1121
Barisal	-	-	-	-	-	-	-	-	-	-	-	-
Chittagong	48472	2471	3018	5652	6756	2558	3815	6741	1718	10284	3697	1763
Dhaka	44183	2400	5167	1667	1750	3333	4950	16417	-	6833	1667	-
Khulna	56045	2617	-	9368	7572	4575	2625	13732	19	9859	3770	1907
Rajshahi	44624	5456	3296	5320	9291	1043	830	7576	42	10594	562	615
Rangpur	38412	4693	103	5116	3376	3264	1827	8110	1026	8638	1738	520
Sylhet	-	-	-	-	-	-	-	-	-	-	-	-
Winter												
Average	52446	3049	2598	2379	7562	6304	4238	10925	1174	11555	1930	733
Barisal	66503	10194	8852	7587	4677	8710	2032	8839	-	11742	2903	968
Chittagong	49356	2048	2852	1488	8583	6996	3487	10532	653	11273	1162	280
Dhaka	-	-	-	-	-	-	-	-	-	-	-	-
Khulna	56713	4906	981	4518	4167	4371	6906	11799	47	13049	4145	1824
Rajshahi	50300	3556	4711	-	9778	5556	5667	8644	2056	9333	667	333
Rangpur	-	-	-	-	-	-	-	-	-	-	-	-
Sylhet	63079	5001	1600	4009	6426	4203	5481	12964	6456	11374	3529	2035
Total												

Table-18.b: Per acre production quantity (Kg) & their value (Tk.) for others variety by division and farming time

Division	Total Value (Tk.)	Per acre production quantity (Kg.) and value (Tk.)					
		Seedling		Green		Dry	
		Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg))	Value (Tk.)
1	2	3	4	5	6	7	8
All							
All	98354	4905	1230	2040	52636	364	44488
Barisal	83590	20645	1935	203	5645	706	76010
Chittagong	113080	4755	1807	336	29180	676	82092
Dhaka	112500	-	-	1250	87500	167	25000
Khulna	110501	763	153	3977	110119	12	229
Rajshahi	87672	9015	1636	4985	84457	13	1580
Rangpur	72381	946	47	1854	43263	220	29071
Sylhet	88249	23529	941	1622	42711	428	44597
Summer							
Average	99693	3078	778	2254	57338	337	41577
Barisal	-	-	-	-	-	-	-
Chittagong	120345	1019	800	379	36026	686	83519
Dhaka	112500	-	-	1250	87500	167	25000
Khulna	114021	-	-	4398	113829	16	192
Rajshahi	87697	9091	1649	5022	85040	8	1007
Rangpur	72381	946	47	1854	43263	220	29071
Sylhet	-	-	-	-	-	-	-
Winter							
Average	90599	15483	3845	803	25408	518	61346
Barisal	83590	20645	1935	203	5645	706	76010
Chittagong	88604	17343	5203	195	6117	643	77285
Dhaka	-	-	-	-	-	-	-
Khulna	102419	2516	503	3008	101602	3	314
Rajshahi	84722	-	-	622	15278	578	69444
Rangpur	-	-	-	-	-	-	-
Sylhet	88249	23529	941	1622	42711	428	44597

Table-19.a: Per acre production cost (Tk.) by size of land and farming time

Size of land	Per acre production Cost (Tk)											
	Total	Land Preparation	Seed & seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ insecticide	Fertilizer	Harmone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
All	45242	4111	3447	3577	5175	3555	3398	9251	728	9541	1765	693
<= 0.04	42915	4200	3734	3558	4432	2286	3106	9662	782	8675	1943	538
0.05 – 0.49	46344	4369	3639	3629	5236	3726	3688	9481	770	9191	1828	786
0.50 – 0.99	44613	3446	3074	3983	5223	3436	2816	8980	636	10879	1647	493
1.00 – 1.49	40533	3688	3026	2249	5408	3230	2074	8161	632	10245	1370	450
1.50 – 2.49	35021	3277	1694	2559	4188	2556	3170	6669	477	8584	1519	326
2.50 – 4.99	37568	2670	2639	1664	3482	2135	2874	9180	523	9942	1770	688
5.00 - 7.49	-	-	-	-	-	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-	-	-	-	-	-
Summer												
Average	45899	3990	2467	4153	5671	3784	3310	9202	791	9836	1898	796
<= 0.04	44890	3716	2194	5074	5539	2451	3055	9153	959	10092	2147	509
0.05 – 0.49	46374	4048	2504	3882	5669	3758	3710	9536	835	9495	2017	918
0.50 – 0.99	45263	3909	2145	5258	5719	3992	2601	8196	741	10574	1615	512
1.00 – 1.49	44608	4031	2917	3710	6171	4336	1731	9250	461	10154	1310	536
1.50 – 2.49	41725	3658	1730	4911	3866	2693	745	5135	1096	15452	2204	237
2.50 – 4.99	39579	2400	4800	1143	4286	2143	1714	10057	-	10714	1786	536
5.00 - 7.49	-	-	-	-	-	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-	-	-	-	-	-
Winter												
Average	44762	4199	4161	3157	4814	3388	3863	9286	683	9326	1668	617
<= 0.04	42316	4347	4202	3097	4095	2235	3121	9817	728	8245	1881	547
0.05 – 0.49	46321	4608	4487	3440	4913	3703	3671	9439	721	8964	1686	687
0.50 – 0.99	44074	3061	3845	2927	4812	2975	2994	9631	548	11133	1673	476
1.00 – 1.49	37321	3418	3111	1097	4806	2358	2344	7303	767	10317	1418	382
1.50 – 2.49	33620	3198	1687	2068	4255	2528	3677	6989	348	7149	1376	345
2.50 – 4.99	35113	3000	-	2300	2500	2125	4290	8110	1163	9000	1750	875
5.00 - 7.49	-	-	-	-	-	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-	-	-	-	-	-

Table-19.b: Per acre production quantity (Kg) & their value (Tk.) by size of land & farming time

Size of land (acres)	Total Value (Tk.)	Per acre production quantity (Kg.) and value (Tk.)					
		Seedling		Green		Dry	
		Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)
1	2	3	4	5	6	7	8
All							
All	99059	3588	823	2268	56771	324	41466
<= 0.04	101441	4122	1153	1123	39582	412	60706
0.05 – 0.49	100875	4312	1000	2176	56176	335	43699
0.50 – 0.99	99139	1583	321	2887	67317	269	31501
1.00 – 1.49	81682	1208	191	2068	45278	310	36214
1.50 – 2.49	89866	836	209	1792	39765	418	49891
2.50 – 4.99	75531	9817	1963	3060	57919	142	15649
5.00 - 7.49	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-
Summer							
Average	97768	4681	935	2633	63762	267	33071
<= 0.04	104341	3847	1509	1984	67344	260	35489
0.05 – 0.49	102384	5088	1025	2621	67459	269	33900
0.50 – 0.99	89099	3172	557	2588	53474	302	35068
1.00 – 1.49	76485	2608	393	2749	54525	171	21567
1.50 – 2.49	86437	4839	1210	3052	54515	199	30712
2.50 – 4.99	70848	17857	3571	4286	66964	3	313
5.00 - 7.49	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-
Winter							
Average	100001	2791	741	2002	51675	366	47584
<= 0.04	100560	4206	1046	861	31149	458	68365
0.05 – 0.49	99747	3731	981	1843	47745	384	51021
0.50 – 0.99	107461	267	125	3135	78791	241	28544
1.00 – 1.49	85779	104	31	1531	37988	420	47759
1.50 – 2.49	90582	-	-	1529	36684	464	53897
2.50 – 4.99	81250	-	-	1563	46875	313	34375
5.00 - 7.49	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-

Table-20.a: Per acre production cost (Tk.) for hybrid variety by division and farming time

Division	Per acre production Cost (Tk)											
	Total	Land Preparation	Seed & seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ insecticide	Fertilizer	Harmone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
All	44752	4219	3594	3426	4932	3530	3384	9257	741	9226	1728	715
<= 0.04	42746	4262	3935	3558	4333	2163	3095	9125	775	8942	2019	540
0.05 – 0.49	46454	4463	3918	3666	4922	3724	3742	9509	792	9131	1780	807
0.50 – 0.99	41426	3557	2761	3119	5226	3303	2414	8764	614	9627	1560	481
1.00 – 1.49	40957	3729	3200	1933	5277	3202	1970	8749	589	10335	1449	525
1.50 – 2.49	33285	3179	1298	2180	3863	2735	3406	7111	392	7126	1596	401
2.50 – 4.99	35113	3000	-	2300	2500	2125	4290	8110	1163	9000	1750	875
5.00 - 7.49	-	-	-	-	-	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-	-	-	-	-	-
Summer												
Average	45669	4111	2795	4120	5336	3733	3328	9373	753	9503	1789	829
<= 0.04	45483	3699	2314	5172	5380	2480	3059	9202	902	10491	2262	522
0.05 – 0.49	46313	4099	2884	3894	5203	3784	3737	9637	812	9404	1899	961
0.50 – 0.99	43543	4130	2343	5127	5524	3647	2356	8364	580	9575	1449	450
1.00 – 1.49	45456	4387	3603	3336	6312	4003	1810	9759	514	9860	1245	627
1.50 – 2.49	38393	3733	-	2300	5333	2533	1427	6413	987	12000	3333	333
2.50 – 4.99	-	-	-	-	-	-	-	-	-	-	-	-
5.00 - 7.49	-	-	-	-	-	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-	-	-	-	-	-
Winter												
Average	44139	4291	4128	2962	4662	3394	3423	9179	733	9040	1688	639
<= 0.04	41834	4449	4475	3020	3984	2057	3106	9099	733	8427	1939	545
0.05 – 0.49	46551	4715	4634	3508	4727	3683	3745	9421	777	8942	1698	700
0.50 – 0.99	39695	3090	3103	1477	4982	3022	2461	9091	642	9669	1651	507
1.00 – 1.49	37572	3233	2896	877	4497	2600	2090	7990	646	10693	1602	449
1.50 – 2.49	32839	3130	1411	2169	3735	2752	3578	7171	340	6701	1444	406
2.50 – 4.99	35113	3000	-	2300	2500	2125	4290	8110	1163	9000	1750	875
5.00 - 7.49	-	-	-	-	-	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-	-	-	-	-	-

Table-20.b: Per acre production quantity (Kg) & their value (Tk.) for hybrid variety by division and farming time

Size of land (acres)	Total Value (Tk.)	Per acre production quantity (Kg.) and value (Tk.)					
		Seedling		Green		Dry	
		Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)
1	2	3	4	5	6	7	8
All							
All	98999	3777	840	2217	55925	327	42234
<= 0.04	104349	4292	1199	1193	42546	411	60604
0.05 – 0.49	102139	4554	1021	2204	57184	334	43934
0.50 – 0.99	92142	1944	369	2639	59171	275	32602
1.00 – 1.49	83364	1315	209	1949	44566	328	38590
1.50 – 2.49	88327	-	-	1988	46105	361	42222
2.50 – 4.99	81250	-	-	1563	46875	313	34375
5.00 - 7.49	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-
Summer							
Average	96920	5691	1073	2568	63831	258	32017
<= 0.04	105398	4188	1655	1975	68259	262	35484
0.05 – 0.49	101723	6417	1221	2603	68393	254	32109
0.50 – 0.99	82543	4192	676	2539	49367	285	32501
1.00 – 1.49	81656	2888	434	2383	53335	219	27887
1.50 – 2.49	103333	-	-	3750	70000	209	33333
2.50 – 4.99	-	-	-	-	-	-	-
5.00 - 7.49	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-
Winter							
Average	100389	2497	684	1982	50639	374	49067
<= 0.04	104000	4326	1048	932	33984	461	68968
0.05 – 0.49	102427	3265	883	1928	49424	390	52120
0.50 – 0.99	99990	106	119	2720	67186	266	32685
1.00 – 1.49	84650	131	39	1623	37966	410	46645
1.50 – 2.49	87018	-	-	1835	44022	374	42997
2.50 – 4.99	81250	-	-	1563	46875	313	34375
5.00 - 7.49	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-

Table-21.a: Per acre production cost (Tk.) for other variety by division & farming time

Size of land	Per acre production Cost (Tk)											
	Total	Land Preparation	Seed & seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ insecticide	Fertilizer	Harmone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
All	46495	3814	3021	3994	5843	3625	3434	9181	690	10397	1866	629
<= 0.04	37888	3857	1444	3443	4781	2941	2962	9795	614	6178	1416	457
0.05 – 0.49	46045	4092	2819	3524	6166	3734	3530	9399	708	9377	1970	726
0.50 – 0.99	50940	3224	3696	5700	5217	3699	3614	9411	679	13366	1819	515
1.00 – 1.49	39035	3545	2412	3364	5872	3327	2439	6086	784	9928	1093	183
1.50 – 2.49	40146	3569	2865	3679	5147	2030	2476	5364	730	12889	1291	107
2.50 – 4.99	39579	2400	4800	1143	4286	2143	1714	10057	-	10714	1786	536
5.00 - 7.49	-	-	-	-	-	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-	-	-	-	-	-
Summer												
Average	46404	3712	1710	4230	6436	3901	3269	8800	873	10603	2150	721
<= 0.04	34310	3892	985	4100	5853	1957	2729	6826	491	6097	1001	379
0.05 – 0.49	46525	3920	1556	3852	6836	3692	3641	9284	892	9725	2313	813
0.50 – 0.99	48600	3482	1761	5513	6097	4662	3077	7870	1055	12513	1939	633
1.00 – 1.49	41938	2911	758	4890	5728	5384	1481	7647	296	11081	1513	248
1.50 – 2.49	43494	3917	2648	6296	3086	2778	383	4457	1154	17284	1605	185
2.50 – 4.99	39579	2400	4800	1143	4286	2143	1714	10057	-	10714	1786	536
5.00 - 7.49	-	-	-	-	-	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-	-	-	-	-	-
Winter												
Average	46579	3909	4228	3777	5298	3370	3586	9533	522	10207	1605	545
<= 0.04	38466	3851	1518	3337	4608	3100	2999	10275	634	6192	1483	469
0.05 – 0.49	45597	4253	3999	3217	5540	3773	3426	9506	535	9052	1650	645
0.50 – 0.99	52933	3004	5345	5859	4467	2879	4072	10724	358	14094	1716	415
1.00 – 1.49	36346	4133	3945	1951	6005	1421	3328	4639	1237	8860	705	123
1.50 – 2.49	37449	3529	3040	1570	6808	1427	4163	6095	388	9347	1038	44
2.50 – 4.99	-	-	-	-	-	-	-	-	-	-	-	-
5.00 - 7.49	-	-	-	-	-	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-	-	-	-	-	-

Table-21.b: Per acre production quantity (Kg) & their value (Tk.) for other variety by division and farming time

Size of land (acres)	Total Value (Tk.)	Per acre production quantity (Kg.) and value (Tk.)					
		Seedling		Green		Dry	
		Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)
1	2	3	4	5	6	7	8
All							
All	99220	3069	777	2411	59143	315	39300
<= 0.04	84649	3175	898	730	23007	412	60744
0.05 – 0.49	97153	3600	939	2094	53260	336	42954
0.50 – 0.99	113030	867	225	3380	83491	256	29314
1.00 – 1.49	75752	831	127	2486	47787	248	27838
1.50 – 2.49	94410	3305	826	1212	21041	587	72542
2.50 – 4.99	70848	17857	3571	4286	66964	3	313
5.00 - 7.49	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-
Summer							
Average	99723	2352	617	2782	63604	287	35502
<= 0.04	93740	421	42	2080	58157	243	35541
0.05 – 0.49	104038	1768	538	2665	65123	309	38377
0.50 – 0.99	101825	1191	326	2685	61448	333	40051
1.00 – 1.49	60206	1728	263	3902	58274	18	1669
1.50 – 2.49	77469	7407	1852	2681	46296	193	29321
2.50 – 4.99	70848	17857	3571	4286	66964	3	313
5.00 - 7.49	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-
Winter							
Average	98757	3728	924	2069	55035	340	42798
<= 0.04	83181	3620	1036	513	17330	439	64815
0.05 – 0.49	90720	5311	1313	1561	42178	363	47229
0.50 – 0.99	122574	592	138	3972	102269	191	20167
1.00 – 1.49	90152	-	-	1174	38073	460	52079
1.50 – 2.49	108060	-	-	28	692	904	107369
2.50 – 4.99	-	-	-	-	-	-	-
5.00 - 7.49	-	-	-	-	-	-	-
7.50 +	-	-	-	-	-	-	-

Table-22: Distribution of number household, amount of loan, repayment amount (Tk) and money used for chilli by farming time & source of loan

Items	Source of loan						
	Total	Bank	NGO	Mahajan	Foria/ Paikar	Relative/ Neghbour	Others
1	2	3	4	5	6	7	
All area							
Number of HH loaner	119983	17237	44731	22303	1436	27891	6384
Amount (Tk.) of loan	1267458237	169230396	560292741	252200390	7959558	232870264	44904888
Repayment amount (Tk.)	567220817	88171507	297192729	56344838	7745686	103223701	14543356
Money (Tk.) used for chilli farming	962616457	118200195	450606326	205035087	3504018	150251371	35019460
Summer							
Number of HH loaner	49686	7212	17763	7464	1436	11860	3951
Amount (Tk.) of loan	645674212	96487650	328511870	52100510	7959558	132174864	28439760
Repayment amount (Tk.)	323260806	62104156	176711943	39047342	7745686	35780299	1871380
Money (Tk.) used for chilli farming	539534143	72165565	320300470	51780000	3504018	66968230	24815860
Winter							
Number of HH loaner	70297	10025	26968	14839	-	16031	2433
Amount (Tk.) of loan	621784	72742746	231780871	200099880	-	100695400	16465128
Repayment amount (Tk.)	243960011	26067351	120479786	17297496	-	67443402	12671976
Money (Tk.) used for chilli farming	423082314	46034630	130305856	153255087	-	83283141	10203600

Table-23: Distribution type of problem wise households by their level of problem

Sl.No.	Type of problem	Level of problem		
		Principal	Medium	Minimum
Total		2528445	2528445	2528445
1	High price of seedling	159215	32710	26952
2	Shortest of fertilizer	90666	89684	79360
3	High price of fertilizer	292404	290221	200110
4	Diseases affected	726239	590809	190950
5	Heavy Rainfall	153264	192658	96734
6	Shortage of Rainfall/Drought	251694	281614	197285
7	Flood	39808	23311	35509
8	Storm/Typhoon	16024	23290	18723
9	Lack of marketing	155322	123547	138887
10	Low value of produced chilli	224644	330099	332847
11	Low value of produced seedling	20095	26783	37991
12	Lack of capital	167619	174888	215867
13	Lack of adequate government support	124317	201613	393471
14	Lack of technical knowledge	39040	90820	207252
15	Shortest of technical cooperation	11628	24815	142710
16	Lack of Chilli storage	56467	31582	213796

Annex-B: Concepts and Definitions

Mauza:

Mauza is the demarcated lowest administrative territorial unit having separate jurisdiction list (JL) number in the revenue records. Every mauza has its well demarcated Cadastral Survey (CS) 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 Unit (PSU):

PSU, here in this Chilli survey refers to one or more than one mauzas or any part of a mauza. For effective implementation of this survey, 210 primary sampling units have been selected from the whole country.

Stratum: Each division treated as a stratum.

.

Ultimate Sampling Units (USUs):

All the households having at least 1 decimal area of land under Chilli cultivation were listed from the selected PSUs and then 30 households have been drawn following the systematic random sampling, where a mouza was treated as the primary sampling unit (PSU) and within the selected mouzas, Chilli crop producing households were the ultimate sampling unit.

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 described 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 this household 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 the households has owner-like possession.

Share crop:

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 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 criteria mentioned earlier is treated as the others category.

Single cropped area:

Single cropped area means wherein one crop has been grown in survey year.

Mixed cropped area:

Mixed cropped area is defined an area where two or more crops are grown

simultaneously in a survey year.

Reference period:

The year 2013, prior to the survey year 2014, was considered as reference period.

Chilli farm holding:

The households having at least one decimal area of land under Chilli cultivation was considered as the Chill farm holding.

Annex-C: Questionnaire (Bangla)

গোপনীয়

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
বাংলাদেশ পরিসংখ্যান ব্যুরো
এগ্রিকালচার উইং
প্রোডাক্টিভিটি এ্যাসেসমেন্ট সার্ভে অব
ডিফারেন্ট এগ্রিকালচারাল ক্রপস্ কর্মসূচি
ই-২৭/এ আগারগাঁও, ঢাকা-১২০৭।

মরিচ ফসলের উৎপাদনশীলতা জরিপ-২০১৪

প্রথম অংশ

১। খানার পরিচিতি

খানার ক্রমিক নং [ ][ ][ ] স্ট্যাট্রাম নম্বর [ ] পিএসইউ নম্বর [ ][ ] নমুনা খানা নম্বর [ ][ ]

খানা প্রধানের নামঃ ..... পিতা/স্বামীর নামঃ								
বিভাগের নাম:	কোড			চাষীর মোবাইল নম্বরঃ				
জেলার নাম:	কোড			উপজেলার নাম:	কোড			
ইউনিয়নের নাম:	কোড			মৌজা/গ্রামের নাম:	কোড			

দ্বিতীয় অংশ

২। মরিচ ফসলের অধীন জমির পরিমাণ, মালিকানা, চাষের প্রকার, চাষের ধরন এবং খরচ (টাকায়)

চাষের সময়	জমির পরিমাণ							মরিচ জাতের প্রকার	চাষের প্রকার কোড	চাষের ধরন (নিজস্ব হলে বাজার দরে লিখতে হবে)					মোট খরচ (টাকা) (১২+১৪+১৫)=১৬
	একর	শতক	নিজস্ব		অন্যের থেকে নেয়া					লাঙ্গল/কোদাল		যান্ত্রিক		অন্যান্য খরচ (টাকা)	
			একর	শতক	কোড	একর	শতক			সংখ্যা	খরচ (টাকা)	সংখ্যা	খরচ (টাকা)		
১	২	৩	৪	৫	৬	৭	৮	৯	১০	১১	১২	১৩	১৪	১৫	১৬
গ্রীষ্মকালীন															
শীতকালীন															

***অন্যের থেকে নেয়া কোডঃ** বর্গা-১, বন্ধক-২, লীজ-৩ এবং অন্যান্য-৪ ***মরিচ জাতের প্রকার:** দেশী-১, হাইব্রিড-২ এবং অন্যান্য-৩ ***চাষের প্রকার কোডঃ** একক-১, মিশ্র-২

৩। মরিচ ফসলের বীজতলা, বীজ বপন ও চারা উত্তোলন সংক্রান্ত খরচ(টাকায়)

চাষের সময়	বীজের পরিমাণ ও মূল্য		বীজতলা প্রস্তুত, বীজ বপন, সেচ ও নিড়ানী খরচ (টাকায়)					চারা উত্তোলনে শ্রমিকের সংখ্যা ও খরচ					উত্তোলনকৃত চারার বাজার মূল্য (টাকা)
	পরিমাণ (কেজি)	মূল্য (টাকা)	বীজতলা প্রস্তুত খরচ (টাকা)	বীজ বপন খরচ (টাকা)	সেচ খরচ (টাকা)	নিড়ানী ও অন্যান্য খরচ (টাকা)	মোট খরচ (টাকা) (৩+৪+৫+৬+৭)=৮	শ্রমিকের সংখ্যা (পারিবারিক)		শ্রমিকের সংখ্যা (ভাড়া)		উৎপাদিত চারা উত্তোলন খরচ (টাকা)	
								পুরুষ	মহিলা	পুরুষ	মহিলা		
১	২	৩	৪	৫	৬	৭	৮	৯	১০	১১	১২	১৩	১৪
গ্রীষ্মকালীন													
শীতকালীন													

৪। মরিচ ফসল উৎপাদনে চারার সংখ্যা, চারা রোপণ, ক্রয়, নিড়ানী ও সেচ খরচ(টাকায়)

চাষের সময়	চারার সংখ্যা, চারা রোপণে শ্রমিকের সংখ্যা ও খরচ এবং চারার ক্রয় খরচ									নিড়ানী সংক্রান্ত শ্রমিকের সংখ্যা ও খরচ					সেচ সম্পর্কীয় খরচ		
	রোপণকৃত চারার সংখ্যা	চারা রোপণে শ্রমিকের সংখ্যা ও খরচ				চারা রোপণ খরচ	ক্রয়কৃত চারার মূল্য	অন্যান্য খরচ (টাকা)	মোট খরচ (টাকা) (৭+৮+৯) =১০	শ্রমিকের সংখ্যা (পারিবারিক)		শ্রমিকের সংখ্যা (ভাড়া)		নিড়ানী খরচ (টাকা)	সেচ খরচ (টাকা)	অন্যান্য খরচ (টাকা)	মোট খরচ (টাকা) (১৬+১৭)=১৮
		শ্রমিকের সংখ্যা (পারিবারিক)		শ্রমিকের সংখ্যা (ভাড়া)													
		পুরুষ	মহিলা	পুরুষ	মহিলা					পুরুষ	মহিলা	পুরুষ	মহিলা				
১	২	৩	৪	৫	৬	৭	৮	৯	১০	১১	১২	১৩	১৪	১৫	১৬	১৭	১৮
গ্রীষ্মকালীন																	
শীতকালীন																	

৫। মরিচ ফসলের বালাইনাশক (পঁচন প্রতিরোধ, পোকা মাকড় ও রোগ দমন) পরিমাণ ও খরচ(টাকায়)

চাষের সময়	কীটনাশক নামের কোড, পরিমাণ ও খরচ							রোগনাশক নামের কোড, পরিমাণ ও খরচ							মোট খরচ (টাকা) (৪+৭+৮+১১+১৪+১৫)=১৬
	১ম বার ব্যবহৃত কীটনাশক			২য় বার ব্যবহৃত কীটনাশক			অন্যান্য খরচ (টাকা)	১ম বার ব্যবহৃত রোগনাশক			২য় বার ব্যবহৃত রোগনাশক			অন্যান্য খরচ (টাকা)	
	কোড	পরিমাণ মিলিঃ/গ্রাঃ	খরচ (টাকা)	কোড	পরিমাণ মিলিঃ/গ্রাঃ	খরচ (টাকা)		কোড	পরিমাণ মিলিঃ/গ্রাঃ	খরচ (টাকা)	কোড	পরিমাণ মিলিঃ/গ্রাঃ	খরচ (টাকা)		
১	২	৩	৪	৫	৬	৭	৮	৯	১০	১১	১২	১৩	১৪	১৫	১৬
গ্রীষ্মকালীন															
শীতকালীন															

কীটনাশকের নাম ও কোডঃ ক্যারাট-১, ভলিউম-২, প্রোক্লেম-৩, একতারা-৪, এডমায়ার-৫, সবিক্রন-৬, সেভিন-৮৫-৭ এবং অন্যান্য-৮।

রোগনাশকের নাম ও কোডঃ টিল্ট-১, রিডোমিল এম জেড-২, স্কোর-৩, এ্যামিষ্টার টপ-৪, ভারটিমেক-৫, ডাইথেন-এম-৪৫-৬, নিউবেন-৭, বর্দ্দো মিকচার-৮, সিকিউর-৯, ইনডোফিল-এম-৪৫-১০ এবং অন্যান্য-১১।

৬। সার ব্যবহারের পরিমাণ (কেজিতে) ও মূল্য (টাকায়)

চাষের সময়	ইউরিয়া		টিএসপি		ডিএপি		এমওপি		খৈল		গোবর সার		অন্যান্য খরচ (টাকা)	মোট মূল্য (টাকা) (৩+৫+৭+৯+১১ +১৩+১৪)=১৫
	পরিমাণ (কেজি)	মূল্য (টাকা)	পরিমাণ (কেজি)	মূল্য (টাকা)	পরিমাণ (কেজি)	মূল্য (টাকা)	পরিমাণ (কেজি)	মূল্য (টাকা)	পরিমাণ (কেজি)	মূল্য (টাকা)	পরিমাণ (কেজি)	মূল্য (টাকা)		
১	২	৩	৪	৫	৬	৭	৮	৯	১০	১১	১২	১৩	১৪	১৫
গ্রীষ্মকালীন														
শীতকালীন														

৭। মরিচ ফসলের হরমোনের পরিমাণ (মিলিলিটার/গ্রাম) ও মূল্য (টাকায়)

চাষের সময়	হরমোন কোড, পরিমাণ ও খরচ				
	কোড	পরিমাণ মিলিঃ/গ্রাঃ	খরচ (টাকা)	অন্যান্য খরচ (টাকা)	মোট খরচ (টাকা) (৪+৫)=৬
১	২	৩	৪	৫	৬
গ্রীষ্মকালীন					
শীতকালীন					

মরিচ ফসল হরমোনের নাম ও কোডঃ ওকোজিম-১ ও ইথ্রিল-২

৮। মরিচ ফসলের ঋণ সংক্রান্ত তথ্য(টাকায়)

চাষের সময়	ঋণ সংক্রান্ত তথ্য					
	কোন ঋণ নিয়েছেন কি?	হ্যাঁ হলে উৎস	টাকার পরিমাণ	উক্ত ঋণের জন্য কত টাকা পরিশোধ করেছেন	উক্ত ঋণের জন্য কত টাকা পরিশোধ করতে হবে	ঋণকৃত টাকার মধ্যে কত টাকা মরিচ চাষের জন্য ব্যয় করেছেন
১	২	৩	৪	৫	৬	৭
গ্রীষ্মকালীন	হ্যাঁ-১, না-২					
শীতকালীন	হ্যাঁ-১, না-২					

ঋণের উৎসের কোডঃ ব্যাংক-১, এনজিও-২, মহাজন-৩, ফঁড়িয়া/পাইকার-৪, আত্মীয়/প্রতিবেশী-৫ এবং অন্যান্য-৬

৯। মরিচ ফসলের উত্তোলন ও পরিবহন খরচ(টাকায়)

চাষের সময়	মরিচ ফসলের উত্তোলন					পরিবহন খরচ (টাকায়)	অন্যান্য খরচ (টাকায়)	মোট খরচ (টাকা) (৬+৭+৮)=৯
	শ্রমিকের সংখ্যা				খরচ (টাকা)			
	পারিবারিক		ভাড়া					
	পুরুষ	মহিলা	পুরুষ	মহিলা				
১	২	৩	৪	৫	৬	৭	৮	৯
গ্রীষ্মকালীন								
শীতকালীন								

১০। মরিচ ফসলের চারা বিক্রয়, উৎপাদিত মরিচের মূল্য (টাকা)

চাষের সময়	মরিচ চারা বিক্রয়		উৎপাদিত মরিচ				মোট মূল্য (টাকা) (৩+৫+৭)=৮
	পরিমাণ (সংখ্যা)	মূল্য (টাকা)	কাঁচা		শুকনা		
			পরিমাণ (কেজি)	মূল্য (টাকা)	পরিমাণ (কেজি)	মূল্য (টাকা)	
১	২	৩	৪	৫	৬	৭	৮
গ্রীষ্মকালীন							
শীতকালীন							

১১। মরিচ ফসল চাষের জন্য এক একর জমি 'এক বছরের জন্য' লীজ নিতে জমির মালিককে কত টাকা দিতে হয়। টাকাঃ

১২। মরিচ ফসল চাষে প্রধান তিনটি সমস্যা আপনি কি মাত্রায় অনুভব করেন তা নির্দিষ্ট স্থানে কোড দিন।

অতি সমস্যা ☐ **মধ্যম সমস্যা** ☐ **স্বল্প সমস্যা** ☐

- **সমস্যার নাম ও কোডঃ** চারার উচ্চ মূল্য-১, সারের অভাব-২, সারের উচ্চ মূল্য-৩, রোগের আক্রমন-৪, অতি বৃষ্টি-৫, অনাবৃষ্টি/খড়া-৬, বন্যা-৭, টাইফুন/ঝড়-৮, বাজারজাতকরণের অভাব-৯, উৎপাদিত মরিচ ফসল নিম্ন মূল্য-১০, উৎপাদিত চারার নিম্ন মূল্য-১১, প্রয়োজনীয় মূলধনের অভাব-১২, সরকারী সহযোগীতার অভাব-১৩, কারিগরি জ্ঞানের অভাব-১৪, কারিগরি সহযোগিতার অভাব-১৫, মরিচ সংরক্ষণের অভাব-১৬।

চাষী/উত্তর দাতার জাতীয় পরিচয় পত্র নম্বরঃ
চাষী/উত্তর দাতার স্বাক্ষরঃ.....

তথ্য সংগ্রহকারীর স্বাক্ষরঃ
তথ্য সংগ্রহকারীর নামঃ .....
পদবীঃ .....
তারিখঃ.....
মোবাইল নম্বরঃ . . . . . .

সুপারভাইজিং কর্মকর্তার স্বাক্ষরঃ
সুপারভাইজিং কর্মকর্তার নামঃ.....
পদবীঃ .....
তারিখঃ.....
মোবাইল নম্বরঃ . . . . . .

Annex-D: Questionnaire (English)

Government of the People's Republic of Bangladesh
Bangladesh Bureau of Statistics
Agriculture Wing
Productivity Assessment Survey of Different Agicultural Crops Program
E-27/A, Agargoan, Dhaka-1207

Confidencial

Chilli Productivity Survey-2014

First Part

1. Indentification of Household

Household SI No. | | | | **Statrum No.** | | **PSU NO.** | | | **Selected Sample Household No.** | |

Name of Head of Household : ..... Father/Husband Name:							
Division name :	Code			Farmer/Respondent Mobile No:			
District Name :	Code			Upazila Name :	Code		
Union Name :	Code			Mouza/Village Name :	Code		

Second Part

2. Area under chilli Crop, Land ownership, Variety and Land preparation cost (Tk.)

Farming period	Land area							Variety of Pumpkin (Code)	Caltivation type (Code)	Land preparation (Market price is shown when cultivated is own)					Total Cost (Tk.) (12+14+15=16)
	Acre	Decimal	Owned		Land from taken					Plough/Hoe		Mechanized		Others Cost (Tk.)	
			Acre	Decimal	Code	Acre	Decimal			No.	Cost (Tk.)	No.	Cost (Tk.)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Summer															
Winter															

*** Land ownership code:** Share crop-1, Mortgage-2, Lease-3 and others-4 *** Variety of chilli code:** Local-1, Hybrid-2 and Others-3
*** Caltivation type code**: Single-1, Mixed-2

3. Regarding seed, seedling, planting and plucking of seedlings of Chilli crops and cost (Tk.)

Farming period	Seed Qty. & cost		Seedling, Plantation of seed, Irrigation & weeding cost (Tk.)					Number of labour & cost of Plucking of seedling					Produced of Plucking of seedling market price (Tk.)
	Qty. (Kg.)	Cost (Tk.)	Seedling cost (Tk.)	Plantation of seed bed cost (Tk.)	Irrigation cost(Tk.)	Weeding & other cost (Tk.)	Total cost (Tk.) (3+4+5+6+7)=8	Number of labour (Family)		No. of labour (Hired)		Plucking of seedling cost (Tk.)	
								Male	Female	Male	Female		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Summer													
Winter													

4. Number of seedling of Chilli, seedling of plantation, purchase, weeding & irrigation cost (Tk)

Farming period	Number of seedling, labour of plantation & cost and purchase of seedling cost									Weeding related number of labour & cost					Irrigation related cost		
	Plantation of seedling (No.)	No. of labour & cost of seedling of plantation					Purchase of seedling cost (Tk.)	Other cost (Tk.)	Total Cost (Tk.) (7+8+9)=10	Family (Number)		Hired (Number)		Wedding cost (Tk.)	Irrigation cost (Tk.)	Other cost (Tk.)	Total cost (16+17)=18
		No. of labour (Family)		No. of labour (Hired)		Plantation of seedling cost (Tk.)											
		Male	Female	Male	Female					Male	Female	Male	Female				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Summer																	
Winter																	

5. Insecticide & pesticide code, Quantity (gm/ml) & cost (Tk.)

Farming period	Inseticide code, Qty. & cost							Pesticide code, Qty. & cost							Total cost (Tk.) (4+7+8+11+14+15)=16
	1st term used Inseticide			2nd term used Insecticide			Other cost (Tk.)	1st term used pesticide			2nd term used pesticide			Other Cost (Tk.)	
	Code	Quantity (gm/ml)	Cost (Tk.)	Code	Quantity (gm/ml)	Cost (Tk.)		Code	Quantity (gm/ml)	Cost (Tk.)	Code	Quantity (gm/ml)	Cost (Tk.)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Summer															
Winter															

Insecticide name & code**:** Karate-1, Voliam-2, Proclaim-3, Actara-4, Admire-5, Shobicron-6, Sevin-85-7 and Others-8.

Pesticide name & code**:** Tilt-1, Ridomil Gold MZ-2, Score-3, Amistar top-4, Vertimec-5, Dithan- M-45-6, Nuben-7, Boudeaux mixture-8, Secure-9, Indofil-M-45-10 and Others-11**.**

6. Use of fertilizer Quantity (Kg) & cost (Tk.)

Farming period	Urea		TSP		DAP		MOP		Cake		Cowdung		Other cost (Tk.)	Total Cost (Tk.) (3+5+7+9+11+12+13+14)=15
	Quantity (Kg.)	Cost (Tk.)	Quantity (Kg.)	Cost (Tk.)	Quantity (Kg.)	Cost (Tk.)	Quantity (Kg.)	Cost (Tk.)	Quantity (Kg.)	Cost (Tk.)	Quantity (Kg.)	cost (Tk.)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Summer														
Winter														

7. Use of hormone Quantity (gm/ml) & cost (Tk.)

Farming period	Harmon code, Qty. & cost (Tk.)				
	Code	Quantity (ml./gm.)	Cost (Tk.)	Other Cost (Tk.)	Total Cost (Tk.) (4+5)=6
1	**2**	**3**	**4**	**5**	**6**
Summer					
Winter					

Hormone name & code: Ocuzim-1 & Ithril-2

8. Production of Cauliflower loan related information (Tk.)

Farming period	Load related Information					
	Loan taken	If yes, source	Amount of Taka	Amount of loan to be paid	Amount of loan to be realized	Loan(money) used for Chilli crop under cultivition
1	**2**	**3**	**4**	**5**	**6**	**7**
Summer	Yes-1, No.-2					
Winter	Yes-1, No.-2					

Loan source code: Bank-1, NGO-2, Mahajan-3, Foria/Paikar-4, Relative/Neghbour-5 and Others-6

9. Harvesting and transport cost (Tk.)

Farming period	Number of labour of Cilli Harvesting					Transport cost (Tk.)	Other cost (Tk.)	Total Cost (Tk.) (6+7+8)=9
	Number of Labour				Cost (Tk.)			
	Family		Hired					
	Male	Female	Male	Female				
1	2	3	4	5	6	7	8	9
Summer								
Winter								

10. Quantity and value of produced seedling & Chilli crops.

Farming period	Seedling sell value		Production of Chilli crop				Total cost (Tk.) (3+5+7)=8
	Qty. (Number)	Cost (Tk.)	Kacha		Dry		
			Quantity (Kg.)	Cost (Tk.)	Quantity (Kg.)	Cost (Tk.)	
1	2	3	4	5	6	7	8
Summer							
Winter							

11. Per acre yearly leasing value for Chilli crops. **Taka:**

12. Mention three main problems for Chilli cultivation.

Principal **Medium** **Minimum**

- **Problems name & code:** High price of seedling-1, Shortest of fertilizer-2, High price of fertilizer-3, Diseases affected-4, Heavy Rainfall-5, Shortage of Rainfall/Drought-6, Flood-7, Storm/Typhoon-8, Lack of marketing-9, Production low value-10, Seedling low value-11, Lack of capital-12, Lack of adequate government support-13, Lack of technical knowledge-14, Shortest of technical cooperation-15 & Lack of Chilli storage-16.

Farmer/Respondent National ID No. : . . . . . .
Farmer/Respondent Signature: . . . . . .

Data Collector Signature :

Data collector name: .....
Designation: .....
Date:.....
Mobile No.:. . . . . .

Signature of Supervising Officer :

Supervising Officer name: .....
Designation: .....
Date:.....
Mobile No.:. . . . . .

Annex-E: Reference

1. Statistical Year Book of Bangladesh, 2012
   - Bangladesh Bureau of Statistics
2. Agriculture Sample Census, 2005
   - Bangladesh Bureau of Statistics
3. Agriculture ample Survey, 2008
   - Bangladesh Bureau of Statistics
4. Preliminary Report on Agriculture Census, 2008
   - Bangladesh Bureau of Statistics
5. Agriculture Census Report-2008
   - Bangladesh Bureau of Statistics
6. Census of Agriculture 2008 (Analytical report)
   - Bangladesh Bureau of Statistics
7. Census of Agriculture, 1996
   - Bangladesh Bureau of Statistics
8. Yearbook of Agriculture Statistics of Bangladesh, 2011
   - Bangladesh Bureau of Statistics
9. Report on the cost of production of 10 Crops (Aus, Aman, Boro, Wheat, Jute, Potato, Onion, Maize, Oil-seeds & Pulses), 2008-09
   - Bangladesh Bureau of Statistics
10. Report on the cost of production of 04 Crops (Watermelon, Tomato, Papaya & Brinjal) 2012
    - Bangladesh Bureau of Statistics

Acronyms

BBS	Bangladesh Bureau of Statistics
CH	Chittagong Hill
GDP	Gross Domestic Product
GOB	Government of Bangladesh
HH	Household
Kg	Kilogram
M. Tons	Metric Tons
No.	Number
PASDAC	Productivity Assessment Survey of Different Agricultural Crops
PSU	Primary Sampling Unit
RSE	Relative Standard Error
SE	Standard Error
Tk	Taka
T/ha	Ton per hector
USUs	Ultimate Sampling Units
%	Percentage

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