Special Research Work

Impact Assessment of Agricultural Credit Program for the Sharecroppers in FY16 Implemented by BRAC under Refinancing Scheme of Bangladesh Bank

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Preface

The sharecroppers usually have no access to credit offered by formal financial institutions mainly because of collateral requirements like land, building etc. Therefore they are compelled to seek credit from various informal sources at very high interest rates under stringent terms and conditions. Against this backdrop, Bangladesh Bank (BB) initiated a special fund titled "Sharecroppers Refinance Scheme" in 2009, with Tk 500.00 crores, which has been extended to Tk. 600.00 crore till June 2018. Bangladesh Rural Advancement Committee (BRAC) was nominated for channeling the fund to the sharecroppers through its group based lending framework.

This study was carried out by the Research Department of Bangladesh Bank aiming at evaluating the impact of the above fund on improving the sharecroppers' socio-economic conditions during July 2015-June 2016. The study found that the credit programme has enabled the sharecroppers to reduce their heavy reliance on non-institutional credit sources. Almost all the farmers associated with this programme reported that their financial conditions have been improved due to this easy credit programme. The findings show that they are now relatively more capable of having education for children, access to improved diet and clothing etc. The sharecroppers have also accumulated new assets like land, house, furniture, electrical equipments etc after making use of the loans for farming. The local BRAC offices of the surveyed area also provided technical assistance to the sharecroppers in addition to loans which contributed to enhance the farm's efficiency level.

I believe that the findings of this study would be beneficial for Bangladesh Bank to redesign its refinance policy with new insights. It would also be beneficial for policy makers and researchers who are interested to contribute in this area.

I would like to thank all the members of the study team for their effort. In particular, this study would not have been possible without the persistent effort and continuous passion of Md. Abdul Awwal Sarker, General Manager and Farida Parveen, Deputy General Manager, the convener and coordinator of the study respectively. Patience and eagerness of all the survey respondents is praiseworthy for their invaluable time and information.

I could not but thank BRAC for their continuous support and cooperation during field survey and for supplying the data/ information for the successful completion of the study.

Akhtar 10.08.2017

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In order to complete the survey report we received all out cooperation and assistance from a good number of helpful concerned individuals and organizations. In this regard we would like to take this opportunity to thank and express our gratitude towards them. Our research would not have been possible without the help of the sharecroppers who from their busy time schedule, gave some time with us to share important information and their views.

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Executive Summary

The increasing number of population in the country has been a constraint to the land resources. Consequently the agricultural farm size is becoming smaller while the share of small and marginal farmers in the total agriculture labour force is rising. Large rural households quite often rent out land to the small and marginal farmers being termed as sharecroppers in exchange of crops or money. The sharecroppers usually have no access to credit offered by formal financial institutions mainly because of collateral requirements like land mortgage. They are forced to seek credit from various informal sources at a very high interest rate and stringent terms and conditions.

Against this backdrop, Bangladesh Bank (BB) initiated a special fund titled "Sharecroppers Refinance Scheme" in 2009, which has been extended till June 2018. Bangladesh Rural Advancement Committee (BRAC) was nominated for channeling the fund to the sharecroppers through its group based lending framework. This study has been conducted by Research Department to evaluate the impacts of the refinance scheme on the sharecroppers' socio-economic conditions and the achievements of BB's objectives in this regard for FY16. The survey covered a total of 883 sharecroppers of 60 Upazillas.

The credit programme has enabled the sharecroppers to reduce their heavy reliance on non-institutional credit sources. The general perception of the sharecroppers surveyed in respect of economic uplift is very positive. Almost all the farmers reported that their financial condition has improved due to BRAC's credit programme. With the sharecroppers credit facilities they are now relatively more capable of having education for children, improved diet and clothing etc. The sharecroppers have accumulated new assets like land, house, furniture, electrical goods after making use of the loans for farming. The local BRAC offices also provided technical assistance to the sharecroppers in addition to loans which adds up to farm's efficiency. Farmers making use of loans in farming can employ modern crop variety and agricultural machinery, thereby raise farm's productivity. New scope for employment for the labour force was created too.

The survey found that majority of the borrowers is women and they have assumed a new role in the family and farming. They take decisions in relation to choice of crops, technology, food intake, children education etc. Almost all the respondents have access to safe water and sanitary latrines and can avail modern medical services for sickness. This achievement complies with the government Sustainable Development Goals (SDGs). The survey found that some funds were channeled to sectors other than crop production. However, these other non-crop sectors have some bearing / linkages with the crop sector as such. Widening the credit programme's scope to other non-crop sectors may be considered by the BB authority. It was also observed that return from investment in the agricultural sector is very uncertain with respect to crop failure or lack of fair price. To address these problems crop insurance and fair price policy may be introduced. The survey discovered some pitfalls / deviations of the scheme. Both BB and BRAC may critically review these problems and devise appropriate solutions. It may be concluded that BB can continue with the sharecroppers credit programme further given that the problems/deviations are properly addressed.

LIST OF ACRONYMS

BFIs	:	Bank and Financial Institutions
FY	:	Fiscal Year
GDP	:	Gross Domestic Product
MLE	:	Maximum Likelihood Estimate
BB	:	Bangladesh Bank
OLS	:	Ordinary Least Squares
RESET	:	Regression Error Specification Test
SFA	:	Stochastic Frontier Analysis
TE	:	Technical Efficiency
VIF	:	Variance Inflation Factor
NGO	:	Non-Government Organisation

Chapter-1: Background and methodology of the study

1.1 Introduction

Due to continued pressure of population on limited land resources the farm size is getting smaller over time and the percentage of small and marginal farmers has been steadily growing. At the same time rural households with larger size of land owned accumulate some surplus from the adoption of improved technologies are investing in rural non-farm activities or migrating to urban areas in search of better economic opportunities. They are renting-out their land in small pieces to landless, marginal or small farmers through tenancy system keeping ownership rights of the land. Thus landless and marginal land holding farmers enter into farming activities through sharecropping and they are termed as sharecroppers.

In the face of the significant growth of banking sector in Bangladesh and also government's efforts to increase financial access, financial markets is still not up to the mark in the rural areas. The marginal and small farmers have hardly access to credit from formal financial institutions due to requirement of collateral, especially land. That's why sharecroppers virtually have no access to institutional credit as they do not have any land asset to provide as collateral against the loan. Therefore they remained outside the scope of opportunities opened by banks and NGOs through formal credit channels. So they borrow funds at high interest rates mainly from informal sources such as Mohajon, money lenders, traders and rich farmers in the village, against advance selling of crops and labour at below market prices. Payment of interest charges on such high cost loans compose a major drain on the income of the borrowing farmers, that affects their livelihood, and sometimes make them continuously indebted to the money lenders.

Against this backdrop, Bangladesh Bank (BB) addressed the issue with due importance and stipulated a special fund named 'Sharecroppers Refinance Scheme' of TK500 crore (short term TK450 crores and medium term TK50 crores) sanctioned at the 308th meeting of the Board of Directors to provide credit to the real sharecroppers who were engaged in cultivation (at least for last three years) and did not borrow from any NGOs, only at easy terms and low interest rate, and only for crop production. Bangladesh Rural Advancement Committee (BRAC) was given the responsibility of distributing the credit under its group-based lending framework. An agreement was signed between BB and BRAC on 2 September 2009 (as per Chapter 16(10) of BB Order 1972) to facilitate this special type of refinance activities. The programme started in December 2009 and Bangladesh Bank provided BRAC a refinancing facility of TK500 crore (US$70 million) as a revolving loan funds at 5% annual rate of interest. The fund was given

initially for three years with a target of reaching 300,000 farmers with the credit facility. The target group was only sharecroppers with a size of farm of up to 2.47 acres that are either fully (pure tenant) or partially (tenant-owner) rented from absentee or non-farmer land owners. BB's main objective against the programme was to reduce the dependency of sharecropping farmers on high-cost informal markets for financing their working capital needs. In 2012, BB approved extension of the project for another three years till June 2015. Since July 2015 the fund was raised to TK600 crores while tenure of the scheme was extended for another three years till June 2018.

1.2 Literature review

Agriculture as a sector depends more on credit than any other sectors because of seasonal variations in farmers' returns and a changing trend from subsistence to commercial farming (Abedullah et al). Recent literature (Sriram 2007, Wakilur et al 2011) provide evidence of strong positive correlation between agricultural credit at reasonable costs and agricultural production. Carter (1989) argued that credit affects agricultural performance by relaxing the working capital constraints, inducing farmers to adapt to the new technologies and indulge in intensive use of fixed resources. Credit availability enables the farmers to manage their land and other fixed assets, to smooth the consumption during the crop production cycle, and thereby, raise the farm productivity and reduce dependence on high cost informal markets. Sarker (2006) reported that the farmers who had access to credit facility were facilitated to increase their income and to accumulate the capital at a faster rate compared to the farmers who had no access to credit facility. Heady and Jensen (1958) stated that the short term credit facility increased farming efficiency by ensuring adequate input supply in time. But in Bangladesh, available studies indicate limited contribution of formal financial institutions such as banks, NGOs and farmer cooperative in financing the capital needs of the agriculture sector. A large scale farm survey conducted by the International Fertilizer Development Centre (IFDC) in partnership with the Bangladesh Agricultural Research Council (BARC) during 1979-81 reported that only 14 per cent of farm households received credit during 1979/80 and only 11 per cent in 1981/82. The survey also noted that the credit obtained from formal financial institutions was concentrated in the hands of medium and large land owners.

Banking Development and Research Unit of Nepal Rastra Bank (2014) explored the problems related to the procurement and use of agricultural credit by farmers in Kailali district in Nepal.The study assessed impacts of such credit on farmers' technical efficiency and

productivity. It was found that easier access to credit would ultimately contribute to higher productivity of the farmers enabling them to attain higher technical efficiency.

The tenant farmers have restricted accessibility to formal credit sources due to various formalities and rigidities in terms and conditions. Hossain and Bayes (2009) showed that only 26 per cent of total institutional credit in rural Bangladesh is used for agricultural purpose. They also showed that only 1.5 per cent of the farmers owning less than 0.20 hector of land had access to bank credit while 20 per cent of the farmers owning above 2.0 hectors of land could avail bank loan. Because of the collateral requirement of bank and other government institutions, small and landless farmers are deprived of credit.

Abdul Bayes and Patwary (2012) conducted a survey study to assess the impact of loans to sharecroppers on GDP growth. The survey study shows that the chance of having improved condition for the farmers who accessed loans from BRAC as sharecroppers is about 2.2 times higher than those who didn't access such loans. The study recommends that BB should continue its special program under the strategy of inclusive finance since the poorest of the village get the opportunity of improving economic condition.

Three sample surveys were conducted with structured questionnaires by the Agricultural Credit Departmentof BB in three consecutive years (FY10 to FY13) to generate qualitative information for sharecropping households. In their survey they tried to cover mainly the issues like whether the sharecroppers got loans in time and in sufficient amount according to their needs and whether they deposited any collaterals against it, the interest rate on loans, use of the loans, benefits from loan, impact of loan to improve their socio economic condition and their willingness to continue the loans etc.

Research Department Of BB conducted one survey with structured questionnaire in 2016 (for FY15). The findings were that the credit programme was women dominated, the loans were not only used in crop production but also in other sub-sectors of agriculture, 40 percent sharecroppers have bank accounts, after receiving the loan sharecroppers were able to produce more than they did before, some were able to buy land or household goods, consume better food and wear better clothes etc., which improved their standard of living and social status. The study suggested that BB should continue the programme and may sanction additional amount of money for the next term of the programme.

However the generated data/information by all the studies were mostly related to socio-demographic parameters. The studies looked only into the livelihood pattern of the loan recipient sharecroppers and overlooked other aspects like its impact on rural economic development in respect of income and employment generation which may contribute to the economic growth of the country. Those studies had limitations in regard to whether the loan programme was able to fulfill the main objective of BB.

Against this backdrop, this study especially highlights BB's main objectives of this innovative re-financing scheme to bring the remaining excluded population segments and economic sectors into financial inclusion and compare the progress of their livelihood condition after its intervention. In addition the study tried to find out impacts of sharecroppers credit on rural economic development in respect of income and employment generation.

1.3 Objectives of the study

The large and upper middle farms are gradually disappearing in Bangladesh giving way to marginal, small and sharecropping farms, which are dominating the agrarian structure now. The transformation of this agrarian structure indicates a growing need for agricultural credit to sustain technological progress and productivity growth in agricultural sector of Bangladesh. With the introduction of improved agricultural technologies, agricultural credit has come to be recognized as an essential input for crop production.

Due to limitation of formal banking system and conventional microcredit for the sharecroppers, the special credit programme of BB for the sharecroppers is a milestone of a new era, which is facilitating greater access to credit for the sharecropping farmers. It is expected that the programme has contributed a lot to meet the working capital needs of the sharecropping farmers by bringing out them from the curse of high cost informal loans and to facilitate faster adoption of improved technologies. Thus, farm productivity and profitability of the sharecropping farmers has also topped up, which has ultimately helped to improve their livelihoods and nutritional status. It is about seven years that sharecroppers have been receiving this concessional loan through BRAC. BB opted to find out the impacts of the loans on socio-economic uplift of loan recipient sharecroppers as well as rural economic development with a view to taking up future policy actions. So the main objectives of the study were:

i) To evaluate the achievement of BB's objectives for this credit programme;

ii) To assess its impact on socio-economic condition of sharecroppers' livelihood;

iii) To evaluate its contribution on rural economic development like income and employment generation;

iv) To identify the barriers for receiving the loan and to seek the opinion of sharecroppers to make the credit programme more effective; and

v) To endow with policy suggestions

1.4 Methodology of the study

At the beginning of the sampling procedure the survey team collected the district/Upazilawise data/information from BRAC Head Office to know the intensity of the sharecroppers in 46 districts where this special credit programme is being conducted. On the basis of that information the team selected 60 BRAC branches of 60 Upazilas under six divisions throughout the country. A total number of 883 sharecroppers were interviewed. One BRAC branch from one Upazila and 18 sharecroppers from each Upazila were selected. In the case of farmers selection priority was given to those sharecroppers who had been receiving loans at least for two years or more.

A field survey was conducted in February 2017 to collect data/information through face to face interview of the loan recipient sharecroppers with approved questionnaire. The survey team has also interviewed the respective branch managers and local BRAC officers as well. Both qualitative and quantitative data was collected from the loan recipient sharecroppers. To this purpose 6 teams were constituted. A total of 15 members (3 members in 3 teams and 2 members in 3 teams) were selected for these teams. The team members were drawn from Research Department, Statistics Department, Monetary Policy Department, Department of Off-site Supervision, and Financial Inclusion Department of BB. Statistical programme STATA was used to get the output from the raw data. OLS was applied to find out the results for quantitative analysis.

1.5 Limitations of the study

The study considered a sample size of 883 sharecroppers out of 318,935 sharecroppers (as on June 2016), which covered only 0.3 percent of total sharecroppers served by BRAC. Only food crops and vegetables have been taken into consideration while measuring the impact of agricultural credit on farm productivity. In addition, while measuring the impact of agricultural credit on farm productivity, the sample covers only the respondents who received loans from BRAC. The study excluded farmers who were not able to receive such credit facility due to lack

of time and manpower.

1.6 Structure of the study report

The executive summary is presented at the beginning of the report, which offers a brief account of the study. Chapter-1 provides background, Literature review, objectives, methodology and limitations of the study. Some basic statistics are given in chapter-2. Chapter-3 explores the quantitative results of the impacts of this credit programme. Qualitative analysis or the impacts of credit programme on socio-economic and livelihood condition of the sharecroppers are illustrated in chapter-4. Chapter-5 contains the major findings and stylized facts of the survey while chapter-6 explains the problems identified during the field survey. Finally, the report ends with conclusions and policy recommendations in chapter-7.

Chapter-2: Some basic statistics of the survey

BRAC disbursed an amount of TK 11.00 billion among 318,955 sharecroppers during FY16, while it recovered TK 9.52 billion during the same FY. The sharecroppers' credit programme was implemented in 213 Upzillas of 46 districts throughout the country till June 2016. The percentage of male and female sharecroppers in total was about 41.39 and 58.61 respectively. The range of loans disbursed was TK5,000-350,000 with an average loan of TK32000 per sharecropper. BRAC reported almost 99.0 percent recovery rate in its sharecroppers credit programme during FY16 (Table-2.1).

Table 2.1: Sharecroppers credit programme at a glance

Indicators/Financial year	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Amount sanctioned by BB (billion TK)	5	5	5	5	5	5	6
Amount disbursed by BRAC (billion TK)	0.75	1.9	2.5	4.58	6.27	8.31	11.00
Amount refinanced by BB (billion TK)	0.61	1.89	2.38	4.33	4.50	4.50	6.00
Amount recovered by BRAC(billion TK)	0.15	1.46	2.03	3.29	5.53	7.23	9.52
Total number of sharecroppers	65843	139411	191274	255691	276602	287701	318955
Male sharecroppers	64962	122611	124236	125963	124785	120476	132009
Female sharecroppers	881	16800	67038	129728	151817	167225	186946
Number of districts covered	35	35	45	46	46	46	46
Number of Upazila covered	150	150	211	211	211	211	213
Loan range (000 TK)	5-30	3-40	3-100	5-150	5-300	5-300	5-350
Average loan (million TK)	0.012	0.011	0.022	0.019	0.022	0.028	0.032
Loan recovery rate (%)	100	99.14	98.28	97.64	99.45	99.45	98.99

Source: BRAC

Table 2.2: Sample size of the survey and distribution across Divisions

Division	Sample size	Percentage of total
Dhaka	180	20.39
Chittagong	162	18.35
Rajshahi	119	13.48
Khulna	120	13.60
Barisal	120	13.60
Rangpur	182	20.61
Total	**883**	**100.00**

Source: BB survey data, 2017

Table 2.3: Basic statistics of the survey

Sl. No.	Indicators	Status as of June 2016
1.	**Number of sharecroppers (sample size)**	883
2.	**Divisions covered**	6
3.	**Districts covered**	13
4.	**Upazillas covered**	60
5.	**Number of male borrowers**	294
6.	**Number of female borrowers**	589
7.	**Education level (primary and above, %)**	53.68
8.	**Interest rate (%)**	19
9.	**Loan range (000 TK)**	10-300
10.	**Average loan (TK)**	32589
11.	**Average time to get loans**	4 days
12.	**Loan recovery rate (%)**	97
13.	**Bank account holders (%)**	53
14.	**Land ownership (%)**	88.67

Source: BB survey data, 2017

A total of 883 sharecroppers of 60 Upazillas under 13 districts were selected and interviewed with structured questionnaire. Of these sharecroppers, 294 sharecroppers were male and the rest 589 were female, leaving the male and female ratio at about 0.50 (half). Sharecroppers having education level above primary constituted 53.68 percent of the total sample size. About 88.67 percent of the sharecroppers owned land. Fifty three percent of the sharecroppers had bank accounts. The loan range was TK10,000-300,000 with TK32,589 average loan per person. In the survey loan recovery rate was found to be 97 percent (Table-2.3).

Chapter 3: Impacts of agricultural credit on farm production and productivity: Quantitative analysis

3.1 Cobb-Douglas production function

The study intends to assess the contribution of agricultural credit to farm productivity by taking food crops and vegetable production as the representative production of the whole agriculture sector. The study found 336 respondents about (38%) are pure farmers who are involved in food crops and vegetable production and the sample is reduced to 336 at this stage.

Following Bashir etal (2010) and Nepal Rastra Bank (2014), the Cobb-Douglas form of agricultural production function was estimated to assess the contribution of agricultural credit to farm productivity. Cobb-Douglas form of the production function has been selected since it can handle multiple inputs in its generalized form and various econometric estimation problems i.e. serial correlation, heteroskedasticity and multicollinearity can be handled properly and easily.

Formally, the production function can be written as:

$$Y = AX_1^{\beta 1} X_2^{\beta 2} X_3^{\beta 3} X_4^{\beta 4} X_5^{\beta 5} X_6^{\beta 6} e^u$$

Where,

Y (=yield) =Yield of food crops and vegetables (in KG per Kattha[1])

X1 (=seed) =Amountof seed used (in KG per Kattha)

X2 (=fert) = Amount of fertilizer used (in KGper Kattha)

X3 (=irrg) =Irrigation cost (in TK per Kattha)

X4 (=labor) =Amount of labor used including the farmer's own labor time (man days per Kattha)

X5 (=cap) = Amount of capital used (cost of trailer, thresher, etc. in TKper Kattha)

X6 (= credit_invested) =Dummy for Credit invested (“1” for only loan is used, and “0” otherwise)

e = Base of natural logarithm

U = Stochastic random error term

Log-linearizing the production function;

$$lnY = lnA + \beta_1 lnX_1 + \beta_2 lnX_2 + \beta_3 lnX_3 + \beta_4 lnX_4 + \beta_5 lnX_5 + \beta_6 lnX_6 + U \ldots\ldots\ldots\ldots (1)$$

[1] 1 Kattha=1.6 decimal

In more convenient terms,

$$lnyield = \beta_0 + \beta_1 lnseed + \beta_2 lnfert + \beta_3 lnirrg + \beta_4 lnlabor + \beta_5 lncap + \beta_6 credit\_invested + U \ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

All the parameter β's (except β_6) are the output elasticities with reference to the inputs used in the model that show the marginal increment in the yield of food crops and vegetables from the increment in input and are expected to bear a positive sign with them. Since credit_invested is a dummy, the parameter β_6 helps us assess the extent of the vertical shift of the production function as compared to the reference group (farmer's not using agricultural credit in farming).

Hypothesis:

Null hypothesis (Ho): $\beta_6=0$ (Agricultural yield is not significantly affected by the use of agricultural credit in farming)

Alternative hypothesis (H1): $\beta_6 \neq 0$ (Agricultural yield is significantly affected by the use of agricultural credit in farming)

This hypothesis has been tested with the help of t-statistics.

In addition to the t-statistics, a group of other statistics have been used to check the diagnostic test of the estimated model: F-test for the overall significance of the model, VIF Factors and Tolerance Factors for multicollinearity, Breusch-Pagan test for Heteroskedasticity, Shapiro-Wilk W-Test for testing the normality of the residuals, regression error specification (RESET) test and LINK test for omitted variables and model specification errors.

3.2 Stochastic Frontier Analysis (SFA) production function

Stochastic Frontier Analysis (SFA) is a method that uses standard production functions like Cobb-Douglas production function and Translog production function and considers the maximum feasible output level for a given set of inputs. It is used in modeling functional relationships such as: i) modeling cost functions and analysing cost efficiency, ii) modeling production functions and analysing production efficiency, iii) modeling revenue functions and analysing revenue efficiency, etc. (Coelli et al 2005)

The study estimated Stochastic Frontier Analysis (SFA) production function to compare the credit users with the non-users in terms of their technical efficiency in production. SFA has been used in a vast number of empirical applications and altered and extended in a number of ways (Battese and Coelli, 1996).

Following Battese and Coelli (1995) and Nepal Rastra Bank (2014) the SFA production function can be expressed as:

$y_i = X_i\beta + v_i - u_i$, i=1……N;..... (3)

Where,

y_i= logarithm of production of ith farmer

X_i= k×1 vector of logarithms of input quantities of the$i$th farmer

β =vector of unknown parameters;

v_i=random variable assumed N(0,σ^2_v) and independent of u

u_i= inefficiency error term, which is a non-negative random variable associated with technical inefficiency of production, assumed to be independently distributed, such that u_i is obtained by truncation (at zero) of the normal distribution with mean $z_i\delta$ and variance σ^2_u.

$z_i$is a P×1 vector of variables that are assumed to influence the technical efficiency of the firm and δ is an 1×p vector of parameters to be estimated.

The technical inefficiency effect u_i can be modeled as:

u_i=$z_i\delta$

The explanatory variables in the inefficiency model are expected to include the variables which explain the extent to which the production of ith farmer fall short of the corresponding stochastic frontier production value$(X_i\beta + v_i)$.

Coelli et al (2005), proposed that technical efficiency of the$i$th farmer can be estimated as the ratio of observed output of the ith farmer relative to the potential output defined by the frontier function. Formally, technical efficiency of the$i$th farmer is:

TE = $\frac{y_i}{\exp(X_i\beta+v_i)}$ **=** $\frac{\exp(X_i\beta+v_i-u_i)}{\exp(X_i\beta+v_i)}$ **=exp(-u_i)**

The following model was specified for the estimation of SFA production function:

$lnyield = \beta_0 + \beta_1 lnseed + \beta_2 lnfert + \beta_3 lnirrg + \beta_4 labor + \beta_5 lncap + \beta_6 credit\_invested + (v_i - u_i)$.....(4)

Where, the variables: yield, seed, fert, labor, irrg and cap carry the meaning as defined in relations (1) and (2) and v_i and u_i carry the meanings as defined in relation (3).

All the βs are expected to bear a positive sign (except$\beta_0$whose sign cannot be formed as a-priori expectation) showing a positive relationship between the quantity of inputs used and the resultant output.

The technical inefficiency component u_i includes:

$u_i=\delta_0 + \delta_1 exp + \delta_2 edu + \delta_3 land + \beta_4 TA$.....(5) ;

Where,

exp=years of experience; edu = educational level, 1 to 4 (illiterate-higher secondary);land = size of the land being cultivated; TA= technical help and advice received from BRAC.

The coefficients of all the explanatory variables in model (5) are expected to bear a negative sign implying that longer farming experience, educational achievement, land size and technical help and advice received from BRAC reduces the level of technical inefficiency of the farmers.

The SFA model has been estimated by using the FRONTIER software (version 4.1) which is based on the Three Step Estimation Methodology proposed by Coelli (1996) and following the program guide to Frontier 4.1 by Coelli (1996).

Hypothesis (One-sided Generalized Likelihood Ratio Test)

Null Hypothesis (H_0):$\gamma=0$ (inefficiency effects are absent in the model)

Alternative Hypothesis (H_1): $\gamma>0$

The test statistic LR is calculated as: $LR=-2\{\ln[L(H_0)]-\ln[L(H_1)]\}$;

Where, $L(H_0)$ and $L(H_1)$ are the values of the likelihood function under null and alternative hypotheses H_0 and H_1 respectively.

LR statistics has a mixture of chi-square distribution and the critical value is 2.71 at 5% level of significance (Coelli, 2005).

3.3 Cobb-Douglas Production Function Estimation results

Table: 3.1

ly	**Coef.**	**Std. Err.**	**t**	**P>t**
lnseed	.07*	.03	2.61	0.01
lnfert	.13*	.04	3.55	0.00
lnirrg	.12*	.03	3.61	0.00
lnlabor	.17*	.04	4.79	0.00
lncap	.10*	.03	3.11	0.00
Credit- invested	.44*	.06	7.76	0.00
_cons	3.94*	.23	17.26	0.00

Source	**SS**	**df**	**MS**	**Number of obs=**336
Model	66.14	6	11.02	F(6, 329)= 45.69
Residual	79.38	329	.24	Prob > F=0.000 R-squared=0.45
Total	145.52	335	.43	Adj R-squared=0.44 Root MSE=.49

*indicates that the coefficient is significant at 1% level of significance

The estimation result of the Cobb-Douglas production function shows that the overall regression equation is highly significant as shown by the zero value of F-test. All the variables included in the model have expected signs. All the variables are significant at 1 percent level of significance.

The result shows that the credit_investment is highly significant. It means that credit investment in farming contributes significantly to farm productivity. However, the magnitude of the impact is also quite higher as the coefficient of the credit investment is 0.44. It shows that mean log of output (in KG) per kattha (lnyield) for agricultural credit users is higher by 0.44 units than the farmers who did not use credit in agricultural firming or firming by fund of own source.

Higher impacts of agricultural credit investment in farming occurred due to many reasons in the study area. First, based on the utilization of the credit, for example credit used in farming or not, the sample is reduced to 336 which mean that they all are engaged in food crops and vegetable production. The result indicates that the proper utilization of credit receipt is quite high among this group as compared to those who are not using credit in farming or farming by own source. Those who are not using loans or using loans partially in farming are more likely to get involved in other sectors and are supposed to transfer fund mostly. These categories of farmers are supposed to be less careful in farming field and thus their productivity in farming may be low as compared to other group who are firming using credit only.

The resultant estimated regression for credit users and credit non-users in firming can be presented as:

For credit users **(credit invested=1)**

$$ly = 3.94 + 0.07 * \ln seed + 0.13 * \ln fert + 0.12 * \ln irrg + 0.17 * \ln labor + 0.10 * lncap + .44\ credit\_invested$$

For credit non-users **(credit invested=0)**

$$ly = 3.94 + 0.07 * \ln seed + 0.13 * \ln fert + 0.12 * \ln irrg + 0.17 * \ln labor + 0.10 * lncap$$

The significant positive sign with the coefficient of the dummy variable credit invested shows that the productivity of the credit users (credit investment=1) in firming is greater than the productivity of credit non-users (credit investment=0). This result shows the empirical evidence of the validity of the credit program under refinance scheme of Bangladesh Bank which targeted the sharecroppers involved in agricultural as the beneficiary group. Practically, it is observed that the problem of this program such as fund diversion, misuse, consumption and using credit in non-productive sector is higher in the group of non-sharecroppers and the farmers who are involved in other activities.

Other coefficients show the elasticity's of agricultural yield with reference to some particular inputs used in the model. The coefficient of lnfert is 0.13 which indicates that if the fertilizer (in KG) per kattha is increased by 1 percent, production (in KG) per kattha will increase by 0.13 percent. Similarly, the coefficient of irrigationis 0.12 percent implying that if the expenditure on irrigation is increased by 1 percent, production per kattha will increase by 0.12 percent. The

coefficient for seed and capital are also positive and significant but their magnitudes are very small. On the other hand, the coefficient of labor is 0.17 implies that employing1 percent more labor (man days per kattha) in the production process will affect production by 0.17 percent. The coefficient of labor is significant and its magnitude is quite higher than the others.

The study initially considers few other variables such as experience in agriculture, involvement in other sector, cultivated land etc. and dropped these variables as these are not statistically significant.

3.4 Diagnostic tests of the estimated Cobb-Douglas production function:

Tables 3.2-3.4 in annexure show the results of different diagnostic tests of the estimated Cobb-douglas production function.

3.5 Stochastic Frontier Analysis (SFA) Results

Table: 3.5

Descriptive statistics of Technical Efficiency Scores	
Mean	**0.75**
Standard Deviation	0.13
Minimum	0.14
Maximum	0.92
Total Observation	336

Table 3.5 shows that the mean efficiency level of the farmers ranges from 14 percent to 92 percent and the mean efficiency score is 72 percent. It denotes that the sample farmers, on average, have exploited 75 percent of their maximum potential productive capacity. Therefore, there is scope of increasing the level of farmerstechnical efficiency level from 75 percent to 100 percent by adopting new and advanced methods of production and using better quality inputs.

Table:3.6

Distribution of Technical Efficiency Scores between Credit Investors and credit non-investor		
Efficiency Class	Farmers investing credit	Farmers not investing credit
≤ 0.40	0	5.63
0.40-0.60	1.54	14.79
0.60-0.80	47.94	50.70
0.80-1.00	50.52	28.87
Total	100	100
Total no. of Farmers	194	142
Minimum	0.52	0.14
Maximum	0.92	0.89
Average	0.79	0.70
Standard Deviation	0.07	0.16

Table 3.6 shows that the sample farmers investing the credit in agricultural firming have achieved a higher technical efficiency level (0.79 percent) on average compared to the sample farmers who did not use the credit in firming (69 percent). None of the farmers has the technical

efficiency level of less than 40 percent. Only 28.87 percent of the farmers not using the credit have efficiency level of less than 80 percent, whereas it is more than 47.94 percent for credit users. About one half of the farmers using credit have efficiency level of more than 80 percent. It implies that credit using in firming has helped the sample farmers of the study achieve a higher level of technical efficiency.

From the Table 3.7, the coefficients from β_1 toβ_5 represent the elasticity of output with respect to the correspondent inputs in consideration. The MLE estimates in table 3.7 are not soclose to the OLS estimates in table 3.1. ALL the coefficients bear the expected positive sign but these are not significant.

The coefficients from $\delta_1$to δ_4 determine the relative impact of the variables on the inefficiency ofthe farmers. The variables exp, edu and TA have the expected negative signs implying that increase in experience, education, technical assistance reduce technical inefficiency of the farmers. However, the coefficient of technical assistance is highly significant implying that receiving technical help and advice or suggestions from BRAC is more important than other factors to enable the farmers achieve a higher level of technical efficiency.

Table 3.7: Final MLE Estimates

	Coefficient	Standard Error	t-ratio
beta 0	0.49	0.22	0.22
beta 1	0.69	0.28	0.25
beta 2	0.13	0.34	0.38
beta 3	0.13	0.34	0.39
beta 4	0.69	0.35	0.20
beta 5	0.80	0.32	0.25
Delta 1	-0.20	0.13	-0.16
delta 2	-0.51	0.44	-0.11
delta 3	0.12	0.67	0.18
delta 4*	-0.29	0.13	-2.09
Sigma-squared	0.23	0.11	0.21
gamma	0.93	0.37	0.25
LR test of the one-sided error=0.23 with the number of restriction=5			
number of iterations = 28			
maximum number of iterations set at 100			

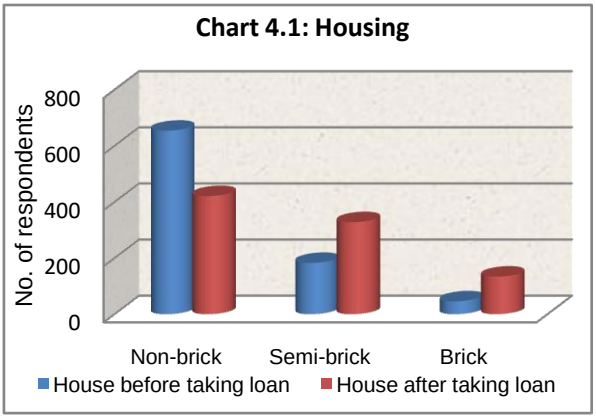
The likelihood ratio test of one sided generalized error shows that the null hypothesis of no technical inefficiency in the sample is not rejected.

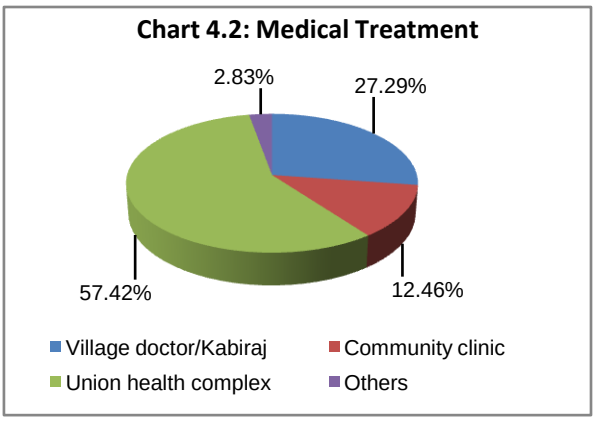
Chapter-4: Qualitative analysis of impacts of the sharecroppers refinance programme

The sharecroppers credit programme has both short and long term impacts on the target groups' socio-economic condition. The long term impacts relate to economic uplift of the sharecroppers. While the short term feature is that it ensures immediate financial support for the sharecroppers on concessional terms and conditions. Having accessed the loan facility, the sharecroppers are able to overcome the financial constraints and to tap their potential.

4.1 Socio-demographic profile

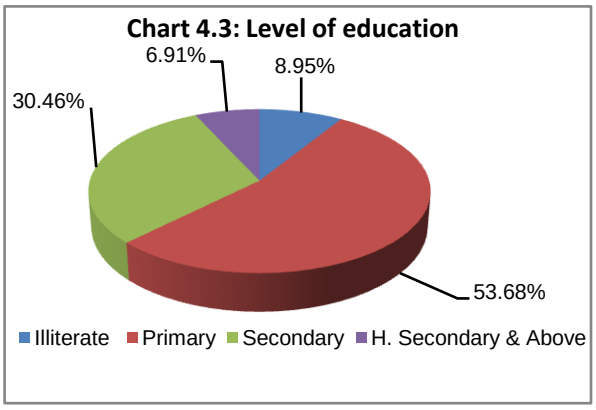
Socio-demographic profile provides some basic information on the composition of families and their characteristics likegender, age, average members of the family and their occupation, education of the children etc. The age of the respondents ranged between 18 to 69 years, which implied that the sharecroppers were able to receive loans and were in the labor force. Among the sharecroppers who received loans, 67 percent were female and the remaining 33 percent were male. About 62.40 percent of the farmers were involved in other activities in addition to farming, like running grocery shops, operating van/auto-bike etc., while 37.60 percent were engaged in farming alone. The average number of members in a family was 5 and the average number of school going children per household was 2.





4.2 Housing status and health service profile

Before availing loans, 74.07 percent of the respondents used to live in non-brick houses, 20.72 percent in semi-brick houses and 5.21 percent in brick houses. After availing loans the figures turned out to be 47.68 percent for non-brick, 37.15 percent for semi-brick, and 15.18 percent for brick houses. Almost 88 percent respondents used tube-wells as a source of safe drinking water and about 97 percent respondents used sanitary latrines. A major portion of the households (57.42 percent) received treatment from the Upazila health complex and the rest sought treatment from village doctors or pharmacies (27.29 percent) and from community clinics (12.46 percent).



4.3 Education profile

About 91.05 percent farmers had education at various levels (from primary to HSC and above) and the rest 8.95 percent were illiterate.

4.4 Land ownership profile

Respondents fell into three categories in terms of land ownership—landless farmers (pure tenants) who were doing only sharecropping, partially rented from absentee or non-farmer land owners in addition to cultivation of own land (tenant—owner) and only cultivating own land. Table-4.1 shows that the share of pure tenants or landless sharecroppers decreased to 10.19 percent in FY16 which was 13.33 percent in FY15. Similarly, the percentage of tenant-owner farmers decreased to 75.10 percent in FY16 from 80.77 percent in FY15. On the other hand, the share of farmers cultivating only own land increased to 14.50 percent in FY16 from 7.11 percent in FY15. The number of the land-owner farmers is increasing gradually. The sharecroppers are able to improve their land holding position or to acquire land which scaled up them from landless to tenant—owner farmers.

Table-4.1

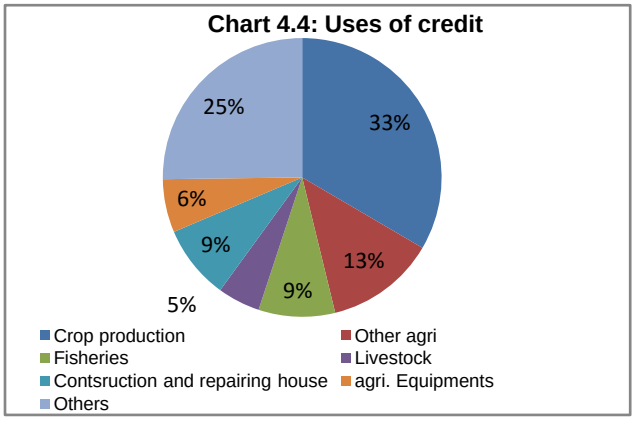
Types of cultivated land	**period**	
	2014-15	2015-16
Only cultivate own land	7.11	14.50
Only do sharecropping	13.33	10.19
own land + sharecropping	80.77	75.10

Source: Data is only taken from the survey (2015-16)

4.5 Credit profile

4.5.a Access to formal credit

Before introduction of the sharecroppers credit programme, about 87 percent of the respondents had no access to formal credit. They had to borrow from informal sources (money lenders) at high interest rates. Sometimes the sharecroppers were forced to distress sale of agricultural product, land, domestic animal and other asset. The survey revealed that after the intervention of BRAC with this special credit to the sharecroppers, almost 97 percent farmers are borrowing from formal/institutional sources.



4.5.b Time required for availing loans

An important feature of the sharecroppers' credit program is that it took maximum 13 days for a sharecropper since joining the group to get loans. The average number of days needed for having loans disbursed was 4.

4.5.cUse of credit

Almost 33 percent farmers used loans for crop production, 13 percent for other agriculture activities, 9 percent for fisheries, 9 percent for construction and repairing houses, 5 percent for livestock, and 6 percent for acquiring agriculture equipments. Although the credit programme was meant only for crop production, a sizable amount (25 percent) was used for other activities rather than agriculture. Farmers tended to diversify the use of loans (Chart-4.4).

4.6 Production profile

4.6.a Increase in production after receiving loans

About 96 percent of the respondents reported that agricultural production increased after using the sharecroppers credit.

4.6.b Reasons for increase in production

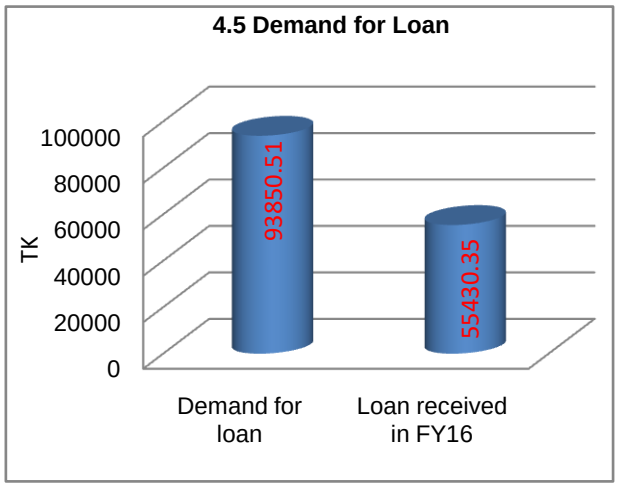
Of the total sharecroppers surveyed, 50.33 percent cited favorable weather as a reason for increased production. About 46.66 percent mentioned that timely availability of loans contributed to increase in agricultural output.

4.6.c Reasons for decrease in production

About 74.66 percent respondents held natural calamities like flood, cyclone and in some cases extreme hot weather as responsible for production fall. Lack of capital was reported by 6.10 percent sharecroppers as a reason for decreased production. Apart from these reasons virus attack on the crops also lead to the decrease in production, and the remaining 3.05 percent mentioned other reasons for the decrease in production.

4.7 Excess demand for loan

About 69.88 percent sharecroppers agreed that the amount of loans was sufficient to operate their seasonal farming activities while 30.12 percent expressed that they needed more amount of loans to meet up expenses. In FY16, BRAC sanctioned TK55430.35 on average per sharecropper, which was 69.31 percent lower than TK 93,850.51 demanded by the respondents on average.



4.8 Farmers' perception about the program

4.8.a Sharecroppers' willingness to continue the program

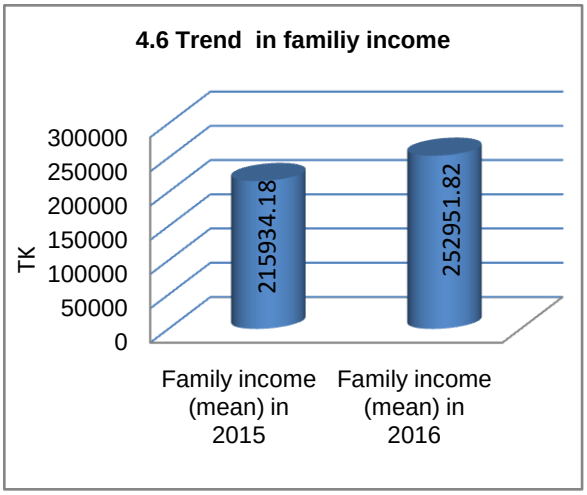
The survey revealed that about 98.87 percent farmers spoke in favour of continuing the credit scheme. It reflects high demand for agricultural credit for the sharecroppers.

4.8.b Reasons to continue

4.2 Table: Reasons to continue

Need	18.57
Profitable	21.86
available	8.15
Low interest	50.74
all	1.33

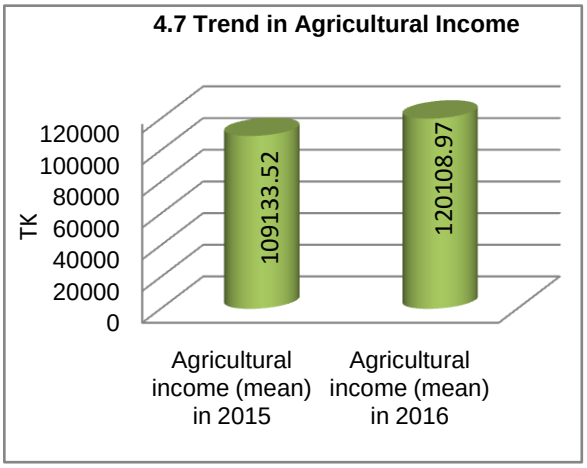
Table 4.2 shows the reasons behind the notion of the farmers to continue the credit scheme. The features which attracted the farmers towards this special credit programme are urgent need, low interest rate, collateral free, availability, easy to get and profitable. Data shows that about 18.57 percent farmers think that they need this loan, 21.86 percent consider it as profitable, and 8.15 percent says it is available and easy to get any time and 50.74percentcomments that the loan should be continued because it has lower interest rate than other sources of fund.



4.9 Income and expenditure pattern

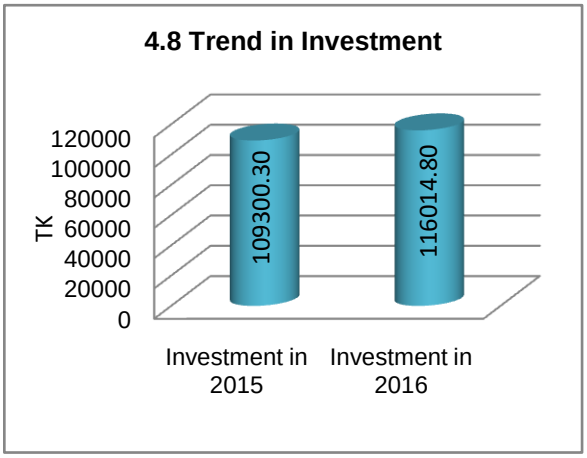
4.9.a Increase in family income

This productivity growth has increased the profitability of farming by reducing the cost of production of the tenant farmers which has helped to raise their income level. That will ultimately improve their livelihoods and nutritional status. The study shows that 83.69 farmers informed that they became financially benefited utilizing the loans. The figure in chart 4.6 illustrates that respondent's mean family income is TK 252951.82 in 2016 which is 17.14 percent higher than TK 215934.18 in 2015.



4.9.b Increase in agricultural income

The respondents draw a large portion of his income from agricultural activities. The trend in agricultural income is uptrend. The mean agricultural income of household was TK 120108.97 in 2016 which was 9.14 percent higher than TK109133.52 in 2015 (Chart-4.7).



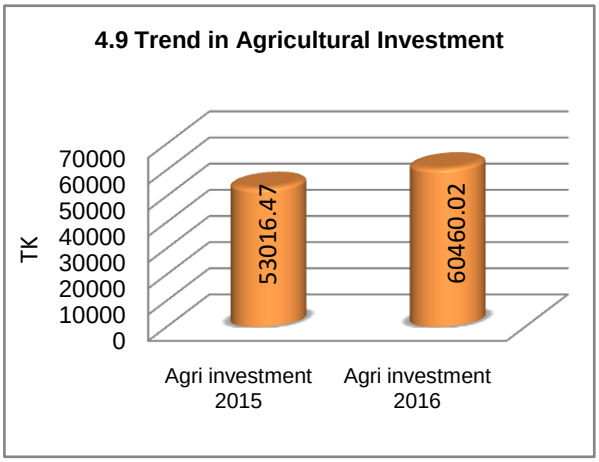
4.9.c Increase in household Investment

The study shows that the mean income of the respondents is increasing generally. With the increasing income households are spending their income as investment purpose. Although the mean investment as a percentage of total family income decreased to 45 in 2016 from 50 in 2015, the

absolute amount of the mean investment of the household increased to TK 116014.80 in 2016 from TK 109300.30 in 2015.

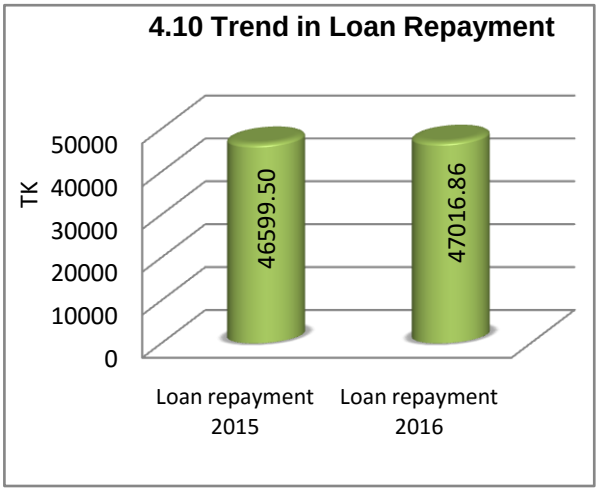
4.9.d Increase in agricultural investment

The study found that the agricultural investment is increasing. The mean investment in agriculture as percentage of total household investment increased to 52 in 2016 from 48 in 2015. Similarly, the absolute amount of agricultural investment increased to TK 60460.02 in 2016 from TK53016.47 in the preceding year (Chart-4.9).



4.9.e Increase in loan repayment

The Figure in chart 4.10 shows that average loan repayment of household slightly increased to TK47016.86 in 2016 from TK46599.50 in 2015 which was 21 and 18 percent of total income of respondent households respectively (Chart-4.10).

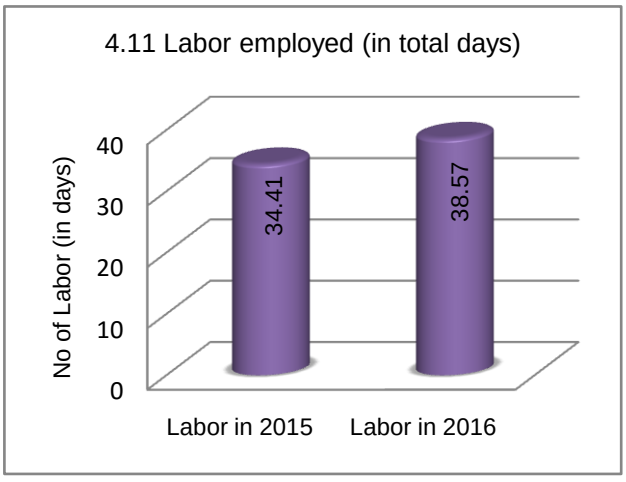


4.10 Livelihood/social statusprofile

The study attempted to assess the sustainability of the outcomes of this credit programme and its impact on socio-economic condition of the borrowers. It is observed that after utilizing this loan almost 83.69 percent farmers are able to increase their farm production and became financially benefited, i.e. they are able to raise their income level to some extent. This higher income has increased the farmers' ability to save and acquire farm and non-farm assets that will contribute to positive change in their livelihoods and to upgrade social status. The study found that 48.36 percent farmers obtained new land, 19.59 percent earned cash, 33.75 percent renovated houses, sent their son for overseas employment, received better treatment for family members, improved quality food etc.

4.11 Employment generation in agriculture

Average labor employed in agriculture increased to 38 days in 2016 from 34 days in 2015 including own labor.Labor days are calculated as days the labors worked, for example if 2 labors worked for 10 days, then total labor is estimated as 10*2=20 (labor days). The increase in trend of labor days shows the increasing employment generation as a result of higher investment which is an indirect impact of the credit program.



4.12 Women empowerment

One of the interesting findings of the sharecroppers credit program is that it has a positive impact on women empowerment. The study found 67 percent of credit receivers are women. As per the discussion with those women, the study team focused that women are getting importance in their family after receiving the loan from BRAC. Although most of the families are headed by men, women receiving loans have some power or priority in making decision to a greater extent after getting introduced with BRAC.

Chapter-5: Major findings and some stylized facts of the survey

Based on the structured questionnaire the study attempted to find the impacts of the sharecroppers credit programme on the farmers' socio-economic condition. Apart from the predefined questions, the survey team members visited the sharecroppers' households and farms and sought their views and comments about the credit programme. BRAC branch officials also made important contributions to the survey by providing feedback of the programme. The primary role of sharecroppers loans is to fulfill the working capital shortages of the farmers. By utilizing the funds the sharecroppers have been able to raise farm production and their living condition as well. Major findings of the survey in relation to the sharecroppers' performance and BRAC's achievements are summarized below.

a) Analyzing the data obtained from the survey, it is observed that, the sharecroppers refinance programme has been able to provide low cost credit to the sharecroppers with comprehensive outreach throughout the country.

b) The programme has also been able to divert the sharecroppers from non-institutional source to institutional source for credit and free the farmers from the curse of the informal credit sources. Since there have been little opportunities for the marginal farmers to borrow from the commercial / specialized banks because of mainly collateral requirements, they used to depend on non-institutional sources (Mahajans) for capital financing. The terms and conditions for non-institutional sources of capital were very strict. The farmers had to repay exorbitant installments against the loans from informal sources. Furthermore, default in installments made the farmers undergo severe consequences.

c) The general perception of the sharecroppers surveyed in respect of economic uplift is very positive. Almost all the farmers reported that their financial condition has improved due to BRAC's credit programme. It is observed that after utilizing this loan almost 83.69 percent farmers are able to increase their farm production and became financially benefited. They were excluded from farming activities as they lacked working capital. With the sharecroppers credit facilities they are now capable of having education for children, improved diet and clothing etc.

d) The survey revealed that the sharecroppers have accumulated new assets like land, house, furniture, electrical goods after making use of the loans for farming. The success of the credit programme is greatly reflected in the transition of landless / marginal farmers to landowner farmers. The farmers managed to build sizeable amount of savings of their own, which was almost impossible in the absence of BRAC's credit programme.

e) The survey found that some respondents receiving this credit use loans partly or fully, and divert fund in sectors other than crop production. On average, the productivity of the credit users in firming is greater than the productivity of credit non-users.

f) The local BRAC offices also provided technical assistance to the sharecroppers in addition to loans which increase farmer's efficiency in farming. Similarly age, experience, and education level reduce farmer's inefficiency in farming. Modern crop variety and use of agricultural machinery together helped to raise farm production. Choosing the right variety / sector for farming was under close monitoring of BRAC offices too. This is evident in the response of the farmers as they reported that they were able to raise agricultural production by utilizing the services rendered by BRAC.

g) The survey found that some funds were channeled to sectors other than crop production. This is really a deviation from the basic terms and conditions. However, these other non-crop sectors have some bearing / linkages with the crop sector as such. Widening the credit programme's scope to other non-crop sectors may be considered by the BB authority.

h) Availability of agricultural labour and agricultural wage were critically examined in the survey. Most respondents (73%) mentioned that agricultural labour was easily available. The average wage was found TK350-400 per labour per day. Cheap agricultural labour has been a key characteristic of the country. Data of labour force on the basis of the survey may be used to assess labour concentration in different regions. Whether the average wage rate for the agricultural labour is sufficient to retain them in this sector is also a crucial question. If the labour moves to other business due to low wage rate, the agriculture sector may face labour shortages.

i) The success of borrowers of the credit programme has a pervasive influence on the non-borrowers. After borrowing funds the sharecroppers have been able to upgrade their economic condition—purchasing land, consuming improved diet, wearing good quality clothing, using electrical appliances, repairing houses etc. Benefits of the credit programme have attracted interests of other farmers of the village. Many farmers reported to the survey team members that they wanted to avail the loan service from BRAC.

j) The sharecroppers credit programme has become an unique example of women empowerment. Majority of the borrowers is women. Having endowed with the funds women have assumed a new role in the family and farming. They take decisions in relation to choice of crops, technology, food intake, children education etc. By involving

women in the credit programme, it has been possible to include them in the overall development process.

k) Almost all the respondents reported that they had access to safe water and sanitary latrines and avail modern medical services for sickness. This achievement complies with the government Sustainable Development Goals (SDGs). BRAC emphasizes health and sanitation awareness in its credit programme as a necessary prerequisite.

l) Total supply of credit under the scheme was inadequate relative to the sharecroppers' demand. The farmers mentioned that more loans were necessary to tap the potential of agricultural production. Costs of inputs like modern variety seeds, pesticides, irrigation have risen over time. Modern agricultural machinery which is crucial for farm production is very expensive to avail. The amount sanctioned by BRAC for farming barely reaches the requirements by the farmers.

Chapter 06: Problems identified during the field survey

In the field survey members of the study team extensively interviewed the sharecroppers and BRAC officials. Furthermore, the team members also visited farms and houses of the sharecroppers. The study found a number of problems faced by the sharecroppers and BRAC offices. The problems noted are as follows—

(a) Sometimes the borrower and the sharecropper is not the same person. Majority of the borrowers is female. Whereas the actual farmer is either the husband or other male relative of the female borrower. For the study team members it was quite often very difficult to collect information from the female respondents as they were not directly involved in farming.

(b) Borrowers have to maintain advance deposits with the BRAC offices before they are endowed with loans. It resembles the requirement of collateral for the eligibility as a borrower. Any form of collateral clearly violates the basic terms and conditions of the sharecroppers credit scheme.

(c) Sharecroppers have to pay installments from the following month after they receive loans. Usually crops production takes at least three to four months. Sharecroppers find it difficult to start repaying loans from the very following month when then do not have crops yield yet.

(d) Sometimes funds meant for crops production are channeled to other agricultural activities like dairy farming, poultry farming, fisheries, or even to some off-farm activities like business, running grocery shops, house repairing etc.

(e) Natural calamities like flood, draught, hailstorm or insect attacks pose great threats to agricultural production.

(f) Lack of fair price for agricultural products acts as a disincentive for the farmers. Inadequate marketing network also deprives agricultural producers of best prices.

(g) Many sharecroppers reported that they found the loans disbursed by the scheme were insufficient. Difference between loans disbursed and actual demand for loans compelled the sharecroppers to seek other sources of funds.

Chapter-7: Conclusions and policy recommendations

The study attempted to assess impacts of the credit programme on the sharecroppers' socio-economic condition, employment generation, and agricultural production. After analyzing data collected from the field surveys and applying quantitative research techniques the study report comes up with the following recommendations:

(a) Some sharecroppers in the sample were of good financial condition. They owned land, had other businesses apart from agriculture etc. The sharecroppers credit programme needs to address the poorer section of the farmers. BRAC should undertake extensive surveys to select farmers who belong to the bottom of the target group.

(b) Sharecroppers are required to pay equal monthly installments for the loans they receive. This repayment condition puts pressure on the farmers as agricultural products take few months to be realized. Farmers who do not have others sources of income find it very difficult to repay loans from the following month. As per the agreement signed between BB and BRAC, borrowers have to pay either "30 percent of the payable in monthly installments before the harvest while the rest 70 percent in two installments after the harvest," or "in equal monthly installments," which is preferable to the borrowers. But in practice only the equal monthly installments choice prevails. A provision of grace period for loan repayment may be executed where the borrowers can repay after a few months.

(c) As per the agreement signed between BB and BRAC, the loan facility has to be provided only for the crop sector. However, presently the sharecroppers are also using the loans in other agricultural sectors like livestock, fishery, poultry, dairy farm, and gardening etc.These other sectors are profitable too. Sometimes there is linkage between crop sector and the other agriculture sectors. Under this circumstance, BB and BRAC may consider bringing the other agriculture sectors within the purview of the sharecroppers credit programme.

(d) The demand for credit is higher compared to the amount disbursed by BRAC. Farmers reported that they could have more production if the amount of loans was higher. BRAC should carry out surveys to assess the amount of credit required by the farmers. More funds will ensure availability of agricultural machinery, seeds, irrigation facility, and labour etc. which is crucial for higher production.

(e) Some sharecroppers acknowledged that BRAC's technical cooperation was very effective in the agricultural activities. Choice of crops, seeds, machineries, pesticides etc. is very crucial for agricultural production, of which farmers may have little knowledge by themselves. BRAC may put emphasis on extending technical assistance to the sharecroppers. Modern technical know-how and consultation services can work together to enhance agricultural production.

(f) Return from investment in the agricultural sector is very uncertain with respect to crop failure or lack of fair price. To address these problems crop insurance and fair price

policy may be introduced. Government direct purchase of agricultural products from the farmers is a recognized practice for fair price. Communication network from the farm to the market should be strengthened.

(g) There is no clear guideline for a sharecropper willing to pay the loan in advance. Some sharecroppers reported that they were not allowed to pay the loans in advance or did not receive interest waiver for advance payment. New clauses may be enacted to safeguard sharecroppers' welfare in relation to advance repayment of loans.

(h) Any form of collaterals including advance deposits by the borrowers should be strictly prohibited. Relieving marginal farmers of the burden of collaterals is the main stress of the credit scheme. Advance deposits clearly violate this basic tenet.

Having analyzed data from the field survey it can be inferred that the sharecroppers credit programme has a strong positive impact on the marginal farmers' income and the agricultural output. By utilizing the funds the sharecroppers have been able to raise their income and assets, to access safe water, medical services and sanitation, to consume improved diet, to educate children. The farmers' overall standard of living has been elevated through this programme. The survey discovered some pitfalls/deviations of the scheme. Both BB and BRAC should critically review these problems and devise appropriate solutions. It may be concluded that BB can continue with the sharecroppers credit programme further given that the problems/deviations are properly addressed.

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ANNEUXURE

Diagnostic tests of the estimated Cobb-Douglas production function:

Tables 3.2-3.4 show the results of different diagnostic tests of the estimated Cobb-douglas production function.

Table 3.2

Breusch-Pagan Test for Heteroskedasticity

Ho: Constant Variance of Error Term
Variables: fitted values of ly
Chi2(1)= 13.30
Prob>Chi2=0.00

As per the results of Breusch-Pagan Test for Heteroskedasticity (table 3.2), we can reject the null hypothesis that the error term has constant variance due to low probability value of Chi-square statistics (0.00). The study considers robust standard errors while making the statistical inference. Based on the robust standard error all the variables are still significant at 1 percent level of significance.

Table: 3.3

Variable	VIF	1/VIF
lnseed	1.35	0.73
lfert	1.43	0.69
lnirrig	1.61	0.62
lnlabor	1.73	0.58
lcap	1.50	0.67
Credit_invest	1.09	0.91
Mean VIF	1.45	

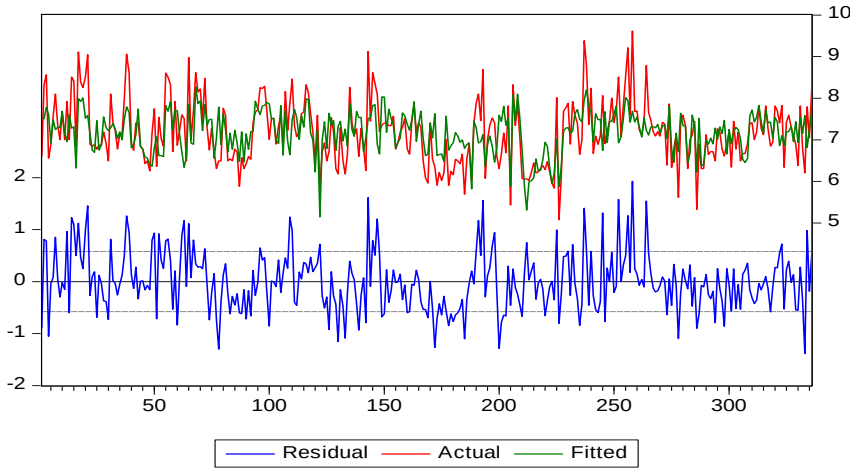
The model do not suffer from the problem of multicollinearity as the variance inflation factors (VIF) of all the variables and mean VIF are less than 10 (Table 3.3).

Table: 3.4

Ramsey RESET test using powers of the fitted values of ly
Ho: model has no omitted variables
F(3, 325) = 3.67
Prob > F = 0.01

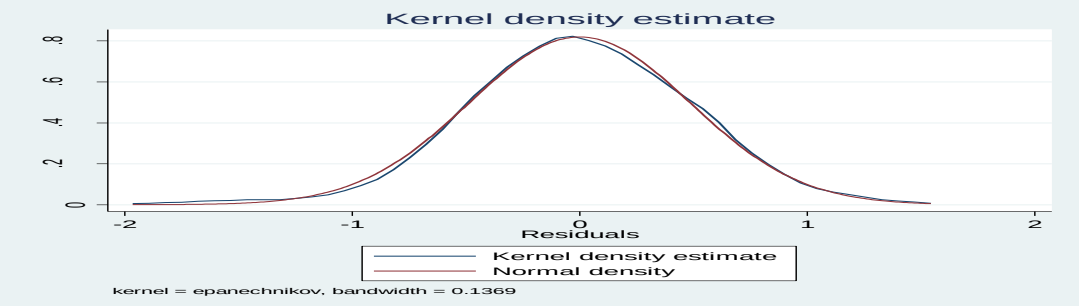
The RESET test (table 3.4) results show that the null hypothesis of no omitted variables can be rejected at 1 percent level of significance. The study included all the variables needed for estimating the Cob-Douglas production function following the existing literatures. So, the study has the limited scope to incorporate any other significant variables to solve the problem of omitted variable bias.

Chart: 3.1



The above chart depicts the plot of actual and fitted values of the natural log of production (agricultural yield) per kattha. From the chart it can be concluded that the fitted values have well captured the actual values of production.

Chart: 3.2



Kernel density estimate of error term revealed that the error term is not normally distributed. Since the sample of the model is large enough, non-normality of error term is not a big problem and the value of the coefficient is still reliable.

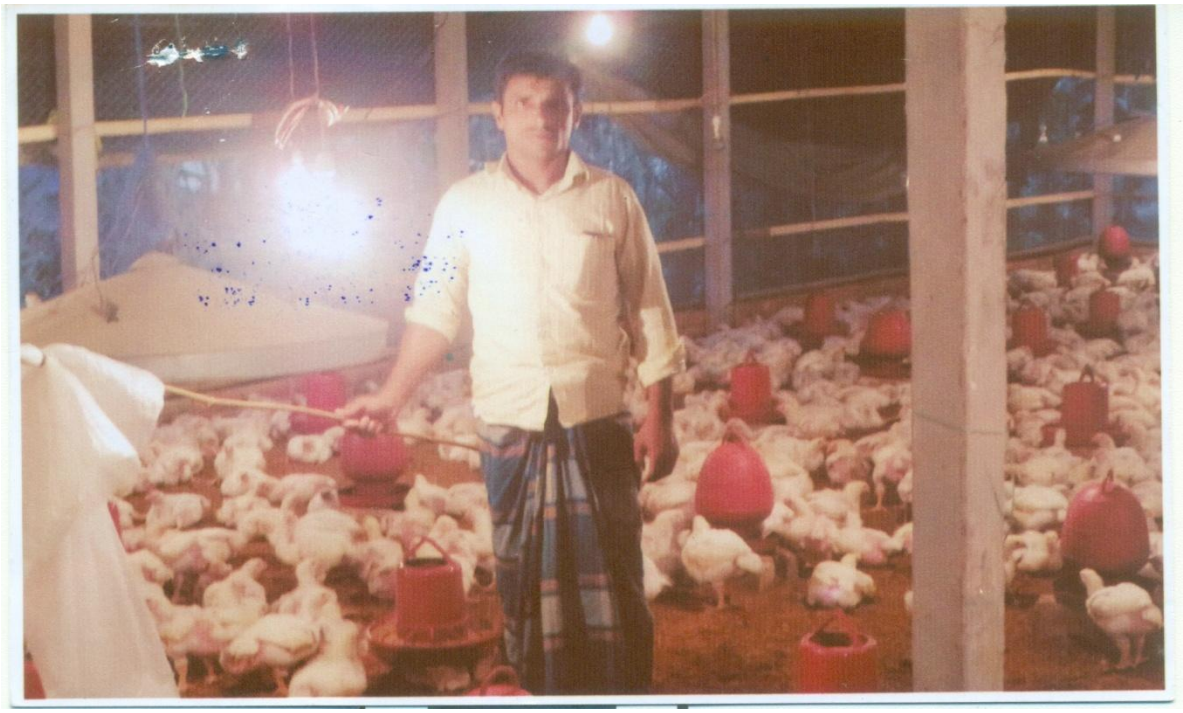
Case Study # 01: BRAC sharecroppers' development program and Makbul Hossain's family, Tangail Sadar, Tangail

Village Tartia lies 3 KM south east to BRAC Tangail Sadar office. Mr. Mokbul Hossain is a farmer of this peaceful and quiet village. He used to lease his ancestral crop field to others due to lack of capital. In 2010 he took a TK50,000 loan from BRAC sharecroppers program and started cultivating rice in his and a shared field. In the first year he built 2 new houses with the money he earned by selling rice and sent his children to school. With another TK50,000 loan from BRAC he started growing rice and mustard in his own 150 decimal land, 100 decimal land shared and 150 decimal on lease. After selling the crops, he planted an electric motor for his fields. He did not stop just there he took another TK50,000 loan from BRAC to cultivate more rice and mustard. Now he has sent his son abroad and has built a house for rice mill. Along with his 4 brothers he has excavated a pond in his 150 decimal land for fishing. His hard work and the loans from BRAC have helped his family to prosper again, and the villagers now respect him for his achievements. One cannot understand the huge potential of agriculture until one experiences it firsthand and this has opened new avenues in the sector of agriculture in Bangladesh.

Case Study # 02: Mr. Arman Miah is a happy bloke Narshingdi

Mr. Niaz Uddin's youngest son Mr. Arman Miah was born in a poor family in Potua village of Narshingdi. Being form a poor family Aramn Miah could not get past primary level education. Since very early age he used to work in others' fields to earn a living, he also got married at an early age. By the fifth year of his marriage he already fathered 3 daughters. The increasing number of family members put Arman in a lot of troubles. It was becoming very difficult for him to lead a life among all these misery and grief and his life seemed to be destined for a doom. Just when all seemed to be lost in 2011 he took a loan of TK15,000 from BRAC BCUP program, and started cultivating banana in 20 decimals of land and this in turn showed him the light of

prosperity and pulled him out of the deep well of debt. Now the scenario has changed, Arman is better off than before. At present he is working to repay a loan amount of TK1,50,000 and has savings of TK48,542. With his hard work Arman now has a poultry farm and 60 decimal of cultivable land. His children are studying in schools, and his prosperity is reflected in the form of the new furniture, TV and refrigerator in his house. His hard work, perseverance, and patience have helped Arman Miah to overcome and misery behind and climb the summit of success.



Case Study# 03: Ms. Lutfa Begum

Name of Sharecropper/Member	Ms. Lutfa Begum
Husband's Name	Md. Mozammel Haq
Address	Vill: Chandgaon, P.O: Chandgaon, P.S: DoudKandi, Dist: Comilla
Village Organization (VO)	Mohammadpur, Chandgaon
Member's Code No.	5103/40
Type of Loan	Agriculture

Ms. Lutfa Begum of village Chandgaon under Doudkandi upazilla of Comilla district was born in a poor but a respectable Muslim family. Her father was a farmer and used to run his family by hard work in farming. Lutfa got married with Mr. Md. Mozammel Haq of the same village. She is 30 years old and her husband Mozammel is about 40 years old. Mozammel also comes of a farmer family. Lutfa's family consists of six members. They have one daughter and three sons. Lutfa took the SSC examination and Mozammel at the HSC examination, but none of them could pass the exams. Mozammel runs his family by cultivation where Lutfa is the main driver of all the things. She does all household tasks and helps her husband in the field work. Mozammel has been involved in agriculture for 6 years, before that he had been in Malaysia for about 10 years. But he could not earn much while abroad. He came back home and got himself involved fully in agriculture again. However, due to poverty Lutfa had a troubled conjugal life. They had a piece of land where they made a thatched hut. They owned only 50 decimal cultivable land from inheritance and another 140 decimal as leased locally which is called "Pushani." Now, their land totally amounted to 190 decimal. By this time Lutfa has become mother of four children, three sons and one daughter. They all are school going now. Lutfa and Mozammel want their children to achieve higher education. Their ambition is very high, but scarcity of money is their regular companion.

In this situation, Lutfa registered herself to the Borgachasi Unnayan Project (BCUP) of BRAC in 2015. At first, she borrowed an amount of TK 1,00,000 and invested it fully in tomato cultivation. Last year they cultivated 150 decimals of land with tomato which cost them TK3,00,000. Due to favorable weather condition they got a good harvest of tomato and sold it for TK 5,00,000. Their net profit was TK2,00,000. However, they were not satisfied with the price situation at that time. They mentioned that if the price were fair, they would have more profit of TK1,00,000 last year. In 2017 they borrowed TK2,00,000 from BRAC and cultivated 140 decimal of land with tomato. Already they have started to sell tomatoes.They expect that if favorable weather condition prevails and price remains fair during the harvesting period, they would be able to earn TK7,50,000. They sell their products in Karwan Bazar, Dhaka. Lutfa told that BRAC-BCUP loan awarded her with great benefits. Alongside farming, her husband runs a grocery shop at a nearby market. Now, they are financially very well off. Financial hardship has gone away from their family. Their four children are going to school regularly. They requested the agricultural refinance scheme of Bangladesh Bank through BRAC to keep running.

Case Study # 04: Md. Abdul Awwal

Name of Sharecropper/Member	MD. Abdul Awwal
Father's Name	Md. Abdul Barek
Address	Vill: Kosami, P.O: Sharafati, P.S: Barura, Dist: Comilla
Village Organization (VO)	Kosami
Member's Code No.	1052/57
Type of Loan	Agriculture

Mr. Md. Abdul Awwal is a poor farmer who lives at village Kosami (old Kodva) under Barura Upazilla in district Comilla. He is 51 years old and has a family of four members. He has a semi-brick house to live in. He possessed 24 decimal land of his own and 192 decimal as mortgage. He borrowed 102 decimal land for sharecropping. Now, his total land amounted to 318 decimal. Mr. Awwal used to lead a miserable life by farming. He went through hardship due to lack of fund for cultivation. To meet up needs of the family, he went abroad in 2010 and spent a few years in Singapore. But he could not do better there and came back home again.

He decided to do something in his own country. Then he met with Mr. Shafiqur Rahman, BCUP Officer of BRAC. With the suggestion of BRAC officer, Awwal got himself admitted into BCUP under Kosami Village Organization in 2013. At first he borrowed TK20,000 from BCUP and cultivated Aush and Amon paddy. He got a good harvest that time. Since 2013, Awwal has been a member of BRAC's Borga Chashi Unnayan Project (BCUP). He borrowed for five times from BRAC till 2016. He paid back the money at regular installments and maintained monthly savings accordingly. Lastly, he borrowed TK50,000 for tomato and aurum cultivation. Mr. Awwal is very hopeful of having a good harvest this year. For last several years he has been earning a handsome amount of money from farming. With this income from cultivation, he has been running a happy life. He has made a semi-brick building with four rooms and set up a vegetable store at a nearby market. Now he is financially very sound. He has only one son who runs the vegetable store. Awwal told the survey team that Bangladesh Bank's refinance scheme for agriculture credit through BRAC has changed his socioeconomic condition and life style.

Case Study # 05: Sharecroppers loans have changed Sona Mia's days

Member's Name	:	Md. Sona Mia
Father's Name	:	Late Abdul karim
Address	:	Village- Shampur, P.S-Pirganj, District-Rangpur
Member's Code	:	279
Credit Sector	:	Cattle rearing and dairy farm

Md. Sona Mia, a disabled man who lives in Shampur village under Pirgonj Upazila in Rangpur district. As a part of follow-upsharecroppers credit programme, a team of Bangladesh Bank officials visited Sona Mia's house. It was very surprising to know about Sona Mia's life changing story. Sona Mia has been disabled since his birth. He lost his father when he was only 8 years old. Out of two brothers, Sona Mia is the youngest. Despite his disability with right hand and hearing he got admitted to school. He could not go far to complete his studies. He had no land to be mentioned. His brother Manik Mia was able to earn his livelihood by working in other-people's houses but Sona Miah was not able to do so. In this situation, he got married in 2009. His hardship worsened as a new baby was born to his family. He along with his mother and wife

went through a very miserable life.

Then, getting advice from a neighbor he met a BRAC official of sharecroppers credit program of Pirgonj office. In the beginning, he borrowed TK10,000 in 2011 and bought a bull. In the following year, he sold out his bull for TK15,000 and then borrowed TK12,000 more. With this money, he bought a local breed of cow for TK18,000 and also made a shed at the cost of TK5,000. After six months the cow gave birth to a calf. The cow was producing 1-2 liters of milk each day. However, it was very difficult for him to bear his family expenses as well as to repay the installments by selling milk. He consulted the matter with BRAC Officials. With the BRAC officer's advice he bought a foreign species of cow for TK70,000 accumulated from selling of his local breeds of cow and BRAC loan of TK20,000. This foreign species of cow has turned his life into prosperity.

After few days, the cow gave birth to a calf and was producing 12-14 liters of milk every day. Sona Mia made some savings after family expenses and repayment of installments by selling milk. The next year, with his savings and loan of TK30,000 from BRAC, he bought another cow

for TK70,000. In the fourth year, taking loan of TK50,000 and using his savings he bought two cows for TK1,20,000. Each cow gave birth every year and the numbers of cows were increasing gradually. This year, he took loan of TK1,00,000 from BRAC and bought two more cows for TK3,00,000. At present, there are five calves and six cows in his cow-shed which value near about TK12,00,000. The cows produce 60-65 liters of milk daily. Now, he is living a happy life with one son and a daughter. So, Sona Mia, though a disabled person by birth, started his dairy farm business with the TK10,000 received as loan from BRAC, now owns assets worth of TK12,00,000 and is living a happy life like other able men. His dream is now to build a beautiful home in the next few days, and to educate his children to make them good citizens of the country. In his own words he expressed his view that “BRAC never disregarded me as a disabled person, rather it helped me a lot; therefore, I love BRAC and always will be with BRAC.”

প্রশ্নমালা (সেট-ক)

২০১৫-২০১৬ অর্থবছরে বাংলাদেশ ব্যাংকের পনঃঅর্থায়ন স্কীম এর আওতায় ব্র্যাকের ঋণ গ্রহণকারী বর্গাচাষীর জন্য প্রশ্নমালা

Village Organisation (VO) এর নাম ঃ

শাখার নাম (ব্র্যাক)ঃ

জেলার নাম ঃ

উপ-জেলার নাম ঃ

বর্গাচাষীর কোড নং ঃ

ক. বর্গাচাষীর পরিচয় ঃ

১) বর্গাচাষীর নাম ঃ
২) পিতা/ স্বামীর নাম ঃ
৩) বয়স ঃ
৪) শিক্ষাগত যোগ্যতা ঃ (১) নিরক্ষর (২) প্রাথমিক (৩) মাধ্যমিক (৪) উচ্চমাধ্যমিক
৫) কৃষি কাজে অভিজ্ঞতা ঃ .....বছর
৬) অন্যকোন কাজে সম্পৃক্ত কি? (১) হ্যাঁ (২)না
ক)হ্যাঁ হলে কাজের ধরন ঃ (১) ব্যবসা (২) রিকসা/ভ্যান চালক (৩) দিন মজুরী (৪) অন্যান্য

৭) ঠিকানা ঃ

৮) মোবাইল নম্বর ঃ .....

খ. বর্গাচাষীর পারিবারিক তথ্য ঃ

৯) পরিবারের মোট বাৎসরিক আয়ঃ..... টাকা
ক)ফসল বিক্রয়/কৃষিকাজ থেকে আয় .....টাকা খ) অন্যান্য আয় (খাতসহ).....টাকা
১০) পরিবারের মোট বাৎসরিক ব্যয়ঃ..... টাকা
ক)ফসল উৎপাদন/কৃষি খাতে ব্যয় .....টাকা খ) অন্যান্য ব্যয় (খাতসহ).....টাকা
১১) পরিবারের সদস্য সংখ্যা ঃ .....জন ১২) উপার্জনক্ষম সদস্য সংখ্যা ঃ .....জন
১৩) লেখাপড়া করছে কত জন? .....জন ১৪) এ বছর নতুন স্কুলে যাচ্ছে কতজন ? .....জন
১৫) বসবাসরত বাড়ীটির ধরণ (বর্তমানে) ঃ (১) কাঁচা (২) আধাপাকা (৩) পাকা
১৬) প্রথম ঋণ গ্রহণের পূর্বে বাড়ীর ধরন ঃ (১) কাঁচা (২) আধাপাকা (৩) পাকা
১৭) বাড়ীতে নিজস্ব নলকূপ আছে কি? (১) হ্যাঁ (২) না
ক) হ্যাঁ হলে কখন স্থাপন করা হয়েছে? (১) প্রথম ঋণ গ্রহণের পূর্বে (২) ঋণ গ্রহণের পর
১৮) বাড়ীতে স্বাস্থ্যসম্মত পায়খানা আছে কি? (১) হ্যাঁ (২) না
ক) হ্যাঁ হলে কখন স্থাপন করা হয়েছে? (১) প্রথম ঋণ গ্রহণের পূর্বে (২) ঋণ গ্রহণের পর
১৯) পরিবারের সদস্যদের চিকিৎসা সেবার ধরণ (১) গ্রাম্য ডাক্তার/কবিরাজ(২)কমিউনিটি ক্লিনিক
(৩) উপজেলা স্বাস্থ্য কমপ্লেক্স (৪)অন্যান্য

গ. বর্গাচাষীর ঋণ সম্পর্কিত তথ্য ঃ

২০) এ বছর (২০১৫-১৬) ব্র্যাক থেকে কত টাকা ঋণ গ্রহণ করেছেন? ..... টাকা
২১) ব্র্যাকের পূর্বে অন্য কোন ব্যক্তি/ মহাজন/প্রতিষ্ঠান থেকে ঋণ গ্রহণ করেছের কি? (১) হ্যাঁ (২) না
২২) হ্যাঁ হলে উক্ত ঋণের সুদের হার উল্লেখ করুনঃ .... %
২৩) ব্র্যাকের থেকে ঋণ গ্রহণের পরও অন্য কোন ব্যক্তি/ মহাজন/ প্রতিষ্ঠান থেকে ঋণ গ্রহণের প্রয়োজন হয়েছে কিনা ? (১) হ্যাঁ (২) না
২৪) হ্যাঁ হলে কেন প্রয়োজন হয়েছে উল্লেখ করুনঃ (১) ব্র্যাকের ঋণ অপর্যাপ্ত (২) সুদের হার বেশী (৩) সময়মত পাওয়া যায় না (৪) অন্যান্য
২৫) ব্যাংক হিসাব (A/C) আছে কি? (১) হ্যাঁ (২) না
২৬) ব্র্যাকের ঋণ প্রথম কত টাকা ও কখন নিয়েছেন ? (ক).....টাকা (খ) .....সাল
২৭) ব্র্যাক হতে সর্বশেষ গৃহীত ঋণের পরিমাণ ও সুদের হার ঃ (ক) .....টাকা (খ) .....%
২৮) ঋণ পেতে কতদিন সময় লেগেছে ? সর্বশেষ ঋণ প্রাপ্তির তারিখ (ক) দিন ..... (খ) তারিখঃ .....
২৯) কোন জামানত/ বাধ্যতামূলক সঞ্চয় লেগেছে কি ? (১ হ্যাঁ (২) না
৩০) হ্যাঁ হলে তার ধরন ঃ (১) জমি (২) টাকা (৩) অন্যান্য (৪) সঞ্চয়ের পরিমাণ
৩১) কিস্তি পরিশোধের ধরন, পরিমাণ ও সংখ্যা (পাশ বই থেকে)ঃ
ক) (১) ধরন ঃ (১) মাসিক (২) সাপ্তাহিক খ) পরিমাণ ঃ .....,.... টাকা, গ) সংখ্যা ঃ ..... টি
৩২) কিস্তি পরিশোধে ব্যর্থ হয়েছেন কি ?(১) হ্যাঁ (২) না
ক) হ্যাঁ হলে তার কারণ ঃ (১) লোকসান (২)প্রাকৃতিক দূর্যোগ (৩) সুদের হার বেশী (৪) অন্যান্য
৩৩) ঋণ পেতে সমস্যা হয়েছে কি? (১) হ্যাঁ (২) না
ক) হ্যাঁ হলে তার ধরন ঃ (১) ঘুষ দিতে হয়েছে (২) সময় বেশী লেগেছে (৩) অন্যান্য
৩৪) ব্র্যাকের ঋণের সুদ হার অন্য ব্যক্তির/প্রতিষ্ঠানের সুদ হারের তুলনায় কেমন ? (১) কম (২) বেশী (৩)একই সমান
৩৫) ঋণ ব্যবহারের খাত ঃ (১) শষ্য উৎপাদন (২) অন্যান্য কৃষি কাজ (৩) মৎস্য চাষ(৪)গবাদি পশু ক্রয়/পরিপালন
(৫) গৃহনির্মাণ/সংস্কার (৬) কৃষি যন্ত্রপাতি ক্রয় (৭) সুদে টাকা খাটানো (৮) অন্যান্য খাত

ঘ. বর্গাচাষীর জমি সংক্রান্ত তথ্য (শতাংশে) ঃ

৩৬) নিজস্ব কৃষি জমি আছে কি ? (১) হ্যাঁ (২) না
ক) হ্যাঁ হলে তার পরিমাণ ..... শতাংশ
খ) না হলে বর্গা জমির পরিমাণ .....শতাংশ
৩৭) বর্গা জমির চুক্তিপত্র আছে কি (১) হ্যাঁ (২) না
ক) বর্গা ফসল প্রাপ্তির অনুপাত ঃ (১) অর্ধেক (২) ১/৩ অংশ (৩) ২/৩ অংশ(৪) অন্যান্য
৩৮) চাষকৃত জমির পরিমাণ পূর্ববর্তী মৌসুমের তুলনায় (১) বৃদ্ধি পেয়েছে (২)হ্রাস পেয়েছে (৩) একই রয়েছে
ক) বৃদ্ধি পেলে তার কারণ ঃ (১) ভাল আবহাওয়া (২) সময়মত ঋণ প্রাপ্তি (৩) অন্যান্য
খ)হ্রাস পেলে তার কারণ ঃ (১)প্রাকৃতিক দূর্যোগ (২)অর্থ সংকট (৩) লোকবলের সংকট (৪) অন্যান্য

ঙ. কৃষিকাজে ব্যবহৃত উপকরণ সম্পর্কিত তথ্য (যে মৌসুমের ফসল ইতোমধ্যে তোলা হয়েছে) ঃ

৩৯) মোট চাষকৃত জমির পরিমাণ ঃ ..... শতাংশ,
৪০) চাষকৃত জমিতে মোট খরচের পরিমাণ ঃ .....টাকা
৪১) ফসল উৎপাদনের জন্য ব্যবহৃত উপকরণ সমূহের খরচের পরিমাণ
(ক) বীজের পরিমাণ (১) ..... কেজি (২)..... টাকা
(খ) সারের পরিমাণ (১) ..... কেজি (২)..... টাকা
(গ)শ্রমিকের সংখ্যা (১)..... জন (২) ..... টাকা
(ঘ) সেচের পরিমাণ ঃ..... টাকা
(ঙ) কৃষি যন্ত্রপাতি ব্যবহারে খরচের পরিমাণঃ ..... টাকা
(চ) কৃষি কাজে ব্যবহৃত ঋণের পরিমাণ ঃ ..... টাকা
৪২) কৃষিকাজে কি শুধুমাত্র ঋণের টাকা ব্যবহৃত হয়েছে? (১) হ্যাঁ (২) না
৪৩) উত্তর না হলে ঋণ ব্যতীত অতিরিক্ত ব্যয়িত অর্থের উৎস কি ? (১) নিজস্ব উৎস (২) ব্যাংক/এনজিও থেকে ঋণ (৩) মহাজনী ঋণ (৪) অন্যান্য

৪৪) চাষাবাদের ক্ষেত্রে ব্র্যাকের নিকট থেকে ঋণ ব্যতীত অন্য কোন সুবিধা/পরামর্শ (প্রযুক্তিগত) পেয়েছেন কি ? (১) হ্যাঁ (২) না

চ. ফসল উৎপাদন সম্পর্কিত তথ্য (যে মৌসুমের ফসল ইতোমধ্যে তোলা হয়েছে) ঃ

৪৫) উৎপাদিত ফসলের পরিমাণ ও মোট গড় মূল্য ঃ ক) পরিমাণ..... মণ, খ) গড় মূল্য ..... টাকা
৪৬) পূর্ববর্তী মৌসুমের তুলনায় উৎপাদন বৃদ্ধি/হ্রাস পেলে তার পরিমাণ ?
(১) বৃদ্ধির পরিমাণ ..... মণ, (২)হ্রাসের পরিমাণঃ..... মণ
ক) বৃদ্ধির কারণ ঃ (১) ভাল আবহাওয়া (২) সময়মত ঋণ প্রাপ্তি (৩) অন্যান্য
খ)হ্রাসের কারণ ঃ (১)প্রাকৃতিক দূর্যোগ (২)অর্থ সংকট (৩) লোকবলের সংকট (৪) ভাইরাস আক্রমন (৫)অন্যান্য

ছ. ব্র্যাকের ঋণ কার্যক্রম সম্পর্কে বর্গাচাষীর মতামত ঃ (আর্থিক,সামাজিক ও পারিবারিক)

৪৭) প্রাপ্ত ঋণ ফসল চাষের জন্য পর্যাপ্ত কি ? (১) হ্যাঁ (২) না
ক) না হলে অতিরিক্ত কি পরিমাণ ঋণ প্রয়োজন ?.....টাকা
৪৮) ফসল থেকে অর্জিত আয় দ্বারা ঋণ পরিশোধ সম্ভব কি ? (১) হ্যাঁ (২) না ,
ক) উত্তর না হলে অতিরিক্ত টাকার উৎস কি? (১) নিজস্ব উৎস (২) ব্যাংক/এনজিও থেকে ঋণ (৩) মহাজনী ঋণ (৪) অন্যান্য
৪৯) আপনি কত বছর ধরে (কতবার) ব্র্যাকের এ ঋণ গ্রহণ করছেন? .....
৫০) কৃষি কাজের জন্য প্রয়োজনীয় শ্রমিক সহজলভ্য কি? (১) হ্যাঁ (২) না
৫১) শ্রমিকের দৈনিক গড় মজুরী কত ? .....টাকা
৫২) কৃষি কাজের জন্য পুনরায় ঋণ গ্রহণ করবেন কি ? (১) হ্যাঁ (২) না ,
ক) উত্তর হ্যাঁ হলে তার কারণ কি ? (১)প্রয়োজন (২) লাভজনক (৩) সহজলভ্য (৪) স্বল্পসুদ
খ) উত্তর না হলে তার কারণ কি ? (১) প্রয়োজন নেই (২) অ-লাভজনক (৩) ঝামেলাপূর্ণ (৪) সুদ বেশি
৫৩) চাষের জমি বাড়ানোর ইচ্ছা আছে কি ? (১) হ্যাঁ (২) না
৫৪) সঞ্চয় করেন কি ? (১) হ্যাঁ (২) না
ক) উত্তর হ্যাঁ হলে সঞ্চয়ের পরিমাণ কত ? .....টাকা
৫৫) ফসলের বাজার দরে সন্তুষ্ট কি ? (১) হ্যাঁ (২) না
৫৬) ঋণ গ্রহণের পর আপনি নতুন কোন সম্পদের মালিক হয়েছেন কি? (১) হ্যাঁ (২) না
ক) উত্তর হ্যাঁ হলে সম্পত্তির ধরণঃ (১) জমি ক্রয় (২) নগদ টাকা (৩) নতুন ঘর/বাড়ি (৪) ইলেকট্রিক্যাল যন্ত্রপাতি
(৫) নতুন আসবাবপত্র (৬) অন্যান্য
৫৭) ঋণ গ্রহণের পর আপনার ব্যক্তিগত/পারিবারিক জীবনে কোন ইতিবাচক পরিবর্তন হয়েছে কি? যেমন-
(১) শিক্ষাক্ষেত্রে (২) উন্নত মানের খাদ্য গ্রহণ (৩) উন্নত পোশাক পরিচ্ছদ (৪) সন্তানের বিদেশ গমণ
(৫) অন্যান্য
৫৮) ঋণ গ্রহনের পর আপনার আর্থিক অবস্থা কেমন মনে হচ্ছে? (১) স্বচ্ছল (২) আগের চেয়ে কিছুটা ভাল (৩) খারাপ
(৪) একই রকম
ব্র্যাকের উক্ত ঋণের বিষয়ে আপনার মতামত/পরামর্শ কি ?
.....
.....

জ. বিগত ছয় বছরে বর্গাচাষীর আর্থিক, সামাজিক ও পারিবারিক অবস্থার পরিবর্তন ঃ (চলমান)

	২০১০-১১	২০১১-১২	২০১২-১৩	২০১৩-১৪	২০১৪-১৫	২০১৫-১৬
১) পরিবারের মোট আয় (টাকায়) ক)কৃষিকাজ/ফসল থেকে আয় খ) অন্যান্য আয় (খাতসহ)						
২) পরিবারের সদস্য সংখ্যা						
৩) পরিবারের মোট ব্যয় (টাকায়) ক)ফসল উৎপাদন খাতে ব্যয় খ) অন্যান্য খাতে ব্যয় (খাতসহ)						
৪) সঞ্চয়ের পরিমাণ (টাকায়) ক) কৃষিকাজ/ফসল থেকে সঞ্চয় খ) অন্যান্য খাত থেকে সঞ্চয় (খাতসহ						
৫) বিনিয়োগের পরিমাণ (টাকায়) ক) কৃষিকাজে বিনিয়োগ খ) অন্যান্য কাজে বিনিয়োগ						
৬) ঋণ গ্রহণের পরিমাণ (টাকায়)						
৭) ঋণ পরিশোধের পরিমাণ (টাকায়)						
৮) ব্র্যাকের ঋণ গ্রহন করার পর কোন মহাজন বা অন্য কোন অপ্রাতিষ্ঠানিক উৎস থেকে ঋণ গ্রহণ করেছেন কিনা ?						
৯) চাষকৃত জমির পরিমাণ (শতাংশে) ক) নিজের জমি খ) শুধুমাত্র বর্গা জমি						
১০) শ্রমিকের মজুরী বাবদ ব্যয় (টাকায়)						
১১) কৃষিকাজে নিয়োজিত শ্রমিকের সংখ্যা (জন) ক) নিজস্ব (পরিবারের সদস্যসহ) খ) খন্ড কালীন নিয়োগকৃত গ) স্থায়ী নিয়োগকৃত						

মন্তব্য/ পরামর্শ ঃ

বর্গাচাষীর নাম ও স্বাক্ষর/টিপসহি

সাক্ষাৎকার গ্রহণকারীর নাম ও স্বাক্ষর

প্রশ্নমালা (সেট-খ)

২০১৫-২০১৬ অর্থবছরে বাংলাদেশ ব্যাংকের পুনঃঅর্থায়ন স্কীম এর আওতায় ঋণ বিতরনকারী ব্র্যাকের শাখা ব্যবস্হাপকের জন্য প্রশ্নমালা

১.	ব্র্যাক শাখার নাম ও ঠিকানাঃ ....গ শাখা ব্যবস্থাপকের নাম..... মোবাইল নম্বর.....						
২.	বর্গাচাষীদের সহায়তা প্রদানের জন্য প্রধান কার্যালয়ের নির্দেশনাগুলো উল্লেখ করুন ঃ ক) খ) গ) ঘ) ঙ) চ) ছ) জ)						
৩.	নির্বাচিত বর্গাচাষীদের মৌলিক তথ্য সংরক্ষণ হচ্ছে কি? (১) হ্যাঁ (২) না						
৪.	বর্গাচাষীর তথ্যসমূহ সরেজমিনে যাচাই করে ঋণ প্রদান করা হচ্ছে কি? (১) হ্যাঁ (২) না						
৫.	বিগত ছয় বছরে খাতওয়ারী ঋণ বিতরণের পরিমাণ(টাকায়)						
	খাতসমূহ	২০১০-১১	২০১১-১২	২০১২-১৩	২০১৩-১৪	২০১৪-১৫	২০১৫-১৬
ক)	কৃষি কাজ						
খ)	গবাদি পশু ক্রয়/পরিপালন						
গ)	গৃহনির্মাণ/সংস্কার						
ঘ)	মৎস্য চাষ						
ঙ)	কৃষি যন্ত্রপাতি ক্রয়						
চ)	অন্যান্য খাত						
৬.	বিগত ছয় বছরে খাতওয়ারী ঋণ গ্রহণকারী বর্গাচাষীর সংখ্যা (জন)						
	খাতসমূহ	২০১০-১১	২০১১-১২	২০১২-১৩	২০১৩-১৪	২০১৪-১৫	২০১৫-১৬
ক)	কৃষি কাজ						
খ)	গবাদি পশু ক্রয়/পরিপালন						
গ)	গৃহনির্মাণ/সংস্কার						
ঘ)	মৎস্য চাষ						
ঙ)	কৃষি যন্ত্রপাতি ক্রয়						
চ)	অন্যান্য খাত						
৭.	ফসল উৎপাদনে কৃষকদেরকে প্রয়োজনীয় পরামর্শ প্রদানে কোন বিশেষজ্ঞ কর্মকর্তা/কৃষি সম্প্রসারণ কর্মকর্তা নিয়োগ করা হয়েছে কি? (১) হ্যাঁ (২) না						
৮.	পুনরায় ঋণ গ্রহণে কৃষকের অনাগ্রহের কারণ? (১)স্বাবলম্বী (২) ক্ষতিগ্রস্ত (৩)অলাভজনক (৪ ঋণ প্রদানে দীর্ঘসূত্রিতা (৫)অপর্যাপ্ত জামানত (৬) অন্যান্য কারণ (উল্লেখপূর্বক)						

৯.	বর্গাচাষীদের বিতরণকৃত ঋণের সুদ, কিস্তি ও মেয়াদ সম্পর্কিত তথ্যাদি						
		২০১০-১১	২০১১-১২	২০১২-১৩	২০১৩-১৪	২০১৪-১৫	২০১৫-১৬
ক)	মোট ঋণ বিতরণের পরিমাণ						
খ)	মোট ঋণ আদায়ের পরিমাণ						
গ)	ঋণ আদায়ের হার						
ঘ)	ঋণের স্থিতির পরিমাণ						
ঙ)	মোট ঋণগ্রহীতা সংখ্যা						
চ)	ঋণের উপর ধার্য্যকৃত সুদ হার						
ছ)	মেয়াদোর্ত্তীর্ণ ঋণের পরিমাণ						
জ)	মোট খেলাপী ঋণের পরিমাণ						
ঝ)	খেলাপী ঋণ গ্রহীতার সংখ্যা						

১০.ঋণ পরিশোধের জন্য কিস্তির ধরণ ঃ (১)সাপ্তাহিক (২) মাসিক (৩) বাৎসরিক

১১.ঋণ পরিশোধে ব্যর্থ বর্গাচাষীর বিরূদ্ধে কি ব্যবস্থা গ্রহণ করা হয়েছে ? (১)মেয়াদ বাড়ানো (২) দণ্ড সুদ আরোপ (৩) সুদ মওকফ (৪) অন্যান্য

১২.ঋণ আদায়ে কোন সমস্যার সম্মখীন হয়েছেন কি? (১) হ্যাঁ (২) না

১৩. উত্তর হ্যাঁ হলে তার ব্যাখ্যা দিনঃ

১৪. ঋণ অনুমোদনের ক্ষেত্রে কৃষকের কোন বিষয়গুলো বিবেচনা করা হয়? (১) বয়স (২) শিক্ষা (৩) জমির পরিমাণ (৪) অন্যান্য

১৫.আলোচ্য ঋণ কর্মসূচি বর্গাচাষীদের আর্থিক, সামাজিক ও পারিবারিক জীবনে কোন প্রভাবফেলেছে কি? (১)হ্যাঁ (২) না

১৬.উত্তর হ্যাঁ হলে তার ব্যাখ্যা দিনঃ (১)পূর্বের থেকে ভালো (২) পূর্বের থেকে খারাপ (৩) একই রকম

১৭.ঋণ গ্রহণের পর বর্গাচাষীর পারিবারে নিম্নে উল্লিখিত কোন কোন বিষয়ে ইতিবাচক পরিবর্তন ঘটেছে?

(১) শিক্ষাক্ষেত্রে (২)খাদ্যের মান (৩) পোশাক পরিচ্ছদ (৪) উন্নত ঘরবাড়ি (৫)সন্তানের বিদেশ গমন (৬) অন্যান্য (বিষয় উল্লেখপূর্বক)

১৮.Crop insurance-এর প্রয়োজন আছে কি ? (১) হ্যাঁ (২) না

১৯.ঋণের পরিমাণ বৃদ্ধির প্রয়োজন আছে কি ? (১) হ্যাঁ (২) না

২০. এ ঋণ বিতরণের ক্ষেত্রে কোন সমস্যার সম্মুখীন হচ্ছেন কি? (১) হ্যাঁ (২) না

২১. হ্যাঁ হলে সমস্যার ধরণ উল্লেখ করুন ঃ

২২. সেগুলো সমাধানের জন্য কি কি পদক্ষেপ নেয়া উচিত বলে আপনি মনে করেন?

২৩.বর্তমানে বর্গাচাষের খাত ব্যতিত অন্য কোন খাতে এ জাতীয় ঋণ প্রদান করা যায় কি?

নোটঃ শাখা পর্যায়ে তথ্য সংগ্রহের সময় সংশ্লিষ্ট নথিপত্র যাচাইপর্বক প্রয়োজনীয় ডকুমেন্টস্ এর ফটোকপি সংগ্রহ করতে হবে।

পরিদর্শকের সার্বিক পর্যবেক্ষণ মতামত ঃ

শাখা ব্যবস্থাপকের

নাম ও স্বাক্ষর

পরিদর্শকের নাম ও স্বাক্ষর

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