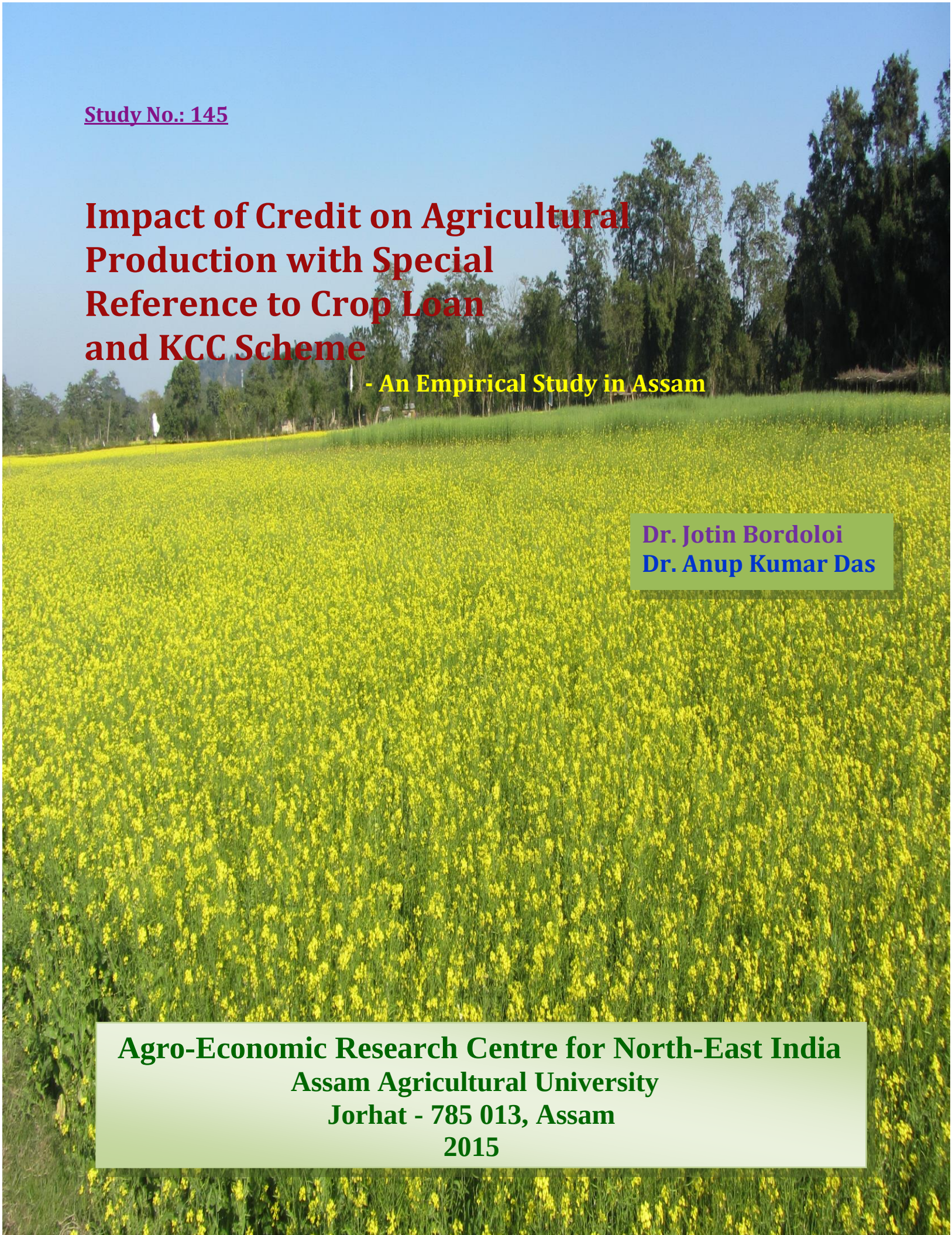

Study No.: 145

Impact of Credit on Agricultural Production with Special Reference to Crop Loan and KCC Scheme

- An Empirical Study in Assam

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Preface

The study entitled, "Impact of Credit on Agricultural Production with special reference to Crop Loan and KCC Scheme- An Empirical study in Assam" was undertaken by the centre in the light of the issues identified by the meeting of the CCOS. The synopsis of the study was cleared by the Ministry in the middle of 2014.The study refers to the crop year 2013-14.

As per approved design, the present study was conducted based on primary and secondary level data. The secondary level analysis was based on the data available in the report of the "Economic Survey Assam 2013-14" and the 'Statistical Hand Book of Assam, 2014" published by the Directorate of Economics and Statistics, under the Planning and Development Department, Government of Assam. For primary level data the beneficiary list under the KCC scheme were collected from 4 selected financial institutes *viz.,* State Bank of India(SBI),United Bank of India (UBI), Assam Gramin Bikash Bank (AGVB)/Langpi Dehangi Rural Bank (LDRB), Karbi Anglong, Assam and Apex Bank Co-op Ltd, Assam of 6 different sample districts, one from each agro-climatic zones of Assam. The sample districts included Barpeta, Cachar, Jorhat, Karbi Anglong, Nagaon and Sonitpur. This study covered a total of 300 sample farmers comprising 240 beneficiaries and 60 non-beneficiaries. There were 40 beneficiaries and 10 non-beneficiaries were selected from each of the sample district.

In the course of investigation, the yield rate of all the crops in *kharif* and *rabi* season in the study area was found in higher side in respect of beneficiary farmers as compared to the non-beneficiary farmers. Combining the gross value of crop output per hectare and the aggregate cost per hectare of both the seasons, the overall BCR stood at 1.71:1 for beneficiary and 1.64:1 for non-beneficiary farmers. In case of subsidiary income from various agricultural and allied activities, non-beneficiary farmers surpassed the beneficiary farmers by 2.29 per cent. In case of repayment status, in aggregate 83.33 per cent of the respondents (240) were found under the category of "NPAs" which is considered to be an alarming problem all around.

I sincerely acknowledge with thanks for the help and cooperation rendered by the officials of the respective banks of the sample districts. I am also thankful to all the sample respondents for their cooperation during the field survey.

The Agro-Economic Research Centre, Visva Bharati, Shantiniketan,West Bengal is the designated peer Reviewer for the Agro-Economic Research Centre, Jorhat. The draft report was submitted to the AER centre, Shantiniketan for comments and a few changes have been made in the final report as suggested. I am also thankful to Mr.Kali Shankar Chattopadhyay for critically reviewing the report.

Like all the other studies, this is also a joint output of the centre. The names of the research staff associated with the study have been mentioned elsewhere in the report.

I hope that the findings of the Report will be useful to the policy makers, academia and researchers as well.

A K Das
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CHAPTER – I

INTRODUCTION

No one can survive without food which is in the hands of a farmer. But Indian farmers in general are still deprived of good quality of life. Farmers will get due share of honour only when they can lead a dignified life like other section of the society. Many farmers cannot withstand the consequence of crop failure and at times, commit suicide every year in different parts of the country. The number of such suicide cases has already touched the figure of 2.39 lakhs in the country in last 15 years (www. wikipedia.org). It is really a matter of great concern that in spite of having a large number of schemes for development of agriculture, we are yet to save the life of the farmers who actually produce food for all of us. Factually, it is true that there is no record of farmer's suicide in Assam till date but that does not mean that the distress of Assam farmers is less than that of the other states of India. Most of the farmers are not economically sound enough to take up the benefits of the new technologies.

The shortage of cash capital is considered to be one of the basic problems encountered by the farmers and under such situation, it has to be accepted that external finance is a must for any new investment proposal. The life of most farmers have become tougher over time because of increase in the prices of agricultural inputs and increased family expenditure on account of price hike of the essential commodities. Therefore, they are unable to invest on high cost technology in crop field from their own farm income. Farmers' distress usually occurs for three different reasons *viz.,* natural disaster, mismatch between the cost of production and market price of the produces and over production. These are the main reasons for which most of the farmers are looking for alternative economic activities to support their families.

A survey of 5,480 framers conducted in late 2013 by the Centre for Studies of Developing Societies (CSDS) showed that 62% farmers were willing to leave farming if they found an alternate job; 37% did not want their children to continue with farming; nearly half of the surveyed farmers believed their conditions were bad; and 22% had actually begun to dislike farming because of agriculture not being a viable occupation any longer. This is simply reflected in the average outstanding debt of Rs.47, 000.00 per farm household, which tragically results in farmers' suicide during the smallest crisis. (Rajib Kumar, The Economics Times, 7 April, 2015). In this

regard, the present attitude of the farmers of Assam is also similar to that of the survey report. They are also willing to switch over from farming if they find other means of livelihood. As per report of the State Government, about 4 lakh farmers of the state had left cultivation. The main causes of withdrawal from cultivation were erosion of land in the river bank areas, recurring floods and farming becoming economically unviable due to decrease in productivity or price factors of the produces.

Role of credit in Agriculture

Credit can play a pivotal role in increasing agricultural production and also in improving the level of living standard of the rural households. By credit one means, "ability to command the other's capital in return for a promise to pay at some specified time in the future". Thus it is a kind of resource, which provides the opportunity to use additional inputs and capital items especially to the farmers who intend to bring in improvement with their lot. Capital-intensive nature of modern agricultural technology and inadequate savings of the farmers have encouraged the common farmers to go for external finances from different sources, both institutional and non-institutional sources.

In Assam, four groups of banks are extending credit to agriculture & allied sectors for different activities. These are the State Bank of India and its associates, other Nationalized Banks, Regional Rural Banks (Assam Gramin Bikash Bank), Apex Banks Cooperative Limited and Private sector Banks. Before introduction of Kishan Credit Card (KCC) scheme, these banks sanctioned crop loan to the farmers under different schemes of the Government of India. But later on, crop loans and term loans were given to the farmers through the KCC scheme involving all banks in the state. Earlier, institutional credit could not bring tangible benefits to the small and marginal farmers and their repayment was not up to the mark. Besides, they also suffered from inadequacy of credit. This was discussed at different point of time at different forum to plug off the bottlenecks in the system so that it can support agricultural production in the state.

Generally, farmers demand for two types of credit, one is considered as short term credit to meet the current expenditure on seeds, fertilizer, insecticides, pesticides, hired laborer, transportation of harvested product to the farm houses, *etc.* and the other is long term credit to meet the capital expenditure on bullocks, power tiller, farm house, modern machinery, rent for leased in land, *etc*. It is observed that 80% of the

agricultural credit is going for short term loan. Most often, it hampers adoption of desired technological application as the farmers usually divert a part of this short term credit for capital expenditure. As a result the farmers may not get the desired production and there is every possibility of remaining at the same economic standing without any improvement. At the same time, inadequate credits create an extra burden on the farm families in repayment of loan. Ultimately, it increases farmer's indebtedness.

Timely availability of agricultural credit at reasonable rate, especially for small and marginal farmers is still crucial for agricultural growth. In Assam, about 85 per cent farmers belong to small and marginal group covering 49 per cent of the total operated area of the state. The Government has taken several measures for improving the flow of agricultural credit to these groups of the farmers. In this regard, introduction of the Kishan Credit Card in 1998-99 is considered as most effective credit system. The aim of this scheme is to provide adequate, timely, cost effective and hassle free credit to the farmers from the formal banking system. A revised KCC scheme was introduced in March, 2012 through which the KCC passbook was replaced by ATM-cum-debit card (Smart card) to all eligible and willing farmers in a time-bound manner. The new version was more advantageous one than the earlier scheme when the entire amount was released at a time. Now farmers can keep their money in the safe custody and they can withdraw the amount as per their requirement. In a way, the KCC scheme is successful to a great extent in bringing the famers under the service net of the banking system. In every year, more and more farmers are coming forward to access baking services. However, the process of issuing smart card in Assam is facing some problems because of the lack of understanding between the two agencies *viz.*, credit institutes and the smart card issuing agencies.

In all India level, the flow of agricultural credit since 2003-04 has consistently exceeded the target. The target of agricultural credit flow for the year 2012-13 was fixed at Rs 5,75,000 crores against which achievement as of September 2012 was Rs.2.39,629 crores. As per RBI report, it was stated that despite sustained effort to improve credit delivery through bank branches; rural outreach indicators remain poor in absolute terms with significant regional and segmental inequities. During 11^{th} plan (2007-12), southern states got 37.55 per cent of agricultural credit but accounted for less than 20 per cent of India's gross cropped area. The eastern and north eastern states, in contrast, accounted for only 7.71 per cent of farm credit despite having a

comparable gross cropped area. In the north eastern region, the flow of farm credit was 0.44 per cent against 2.83 per cent of gross cropped area of the country. *(The Economic Times, 21 January, 2014).*

In Assam, credit flow to agriculture and allied activities under annual credit plan was Rs.100.81 crores in 2003-04 which increased to Rs.2002.47 crores in 2011-12. The CAGR grew at the rate of 33.69 per cent during 2007-12 and percentage of growth in 2011-12 was 128.39 per cent over 2010-11.

In the state, credit flow as crop loans also increased from Rs.43.82 crore in 2003-04 to Rs.1,082.03 crores in 2011-12. The CAGR grew at the rate of 68.59 per cent during 2007-12 and percentage of growth in 2011-12 was 189.60 per cent over 2010-11. The share of crop loan to total agricultural advance had increased from 43 per cent in 2003-04 to 54 per cent in 2011-12.

Further, per capita crop loan was recorded to be Rs.16.44 in 2003-04 which increased to Rs.346.00 in 2011-12. The corresponding figure per family was found at Rs.161.00 and Rs.3935.00, respectively.

The number of operative KCC issued by the Cooperative and Regional Rural bank as on 31st August was 4.07 crores and the number of cumulative KCC issued by Commercial bank as on 1st March 2012 was 5.47 crores in the country.

In Assam, 94,377 number of KCC were issued in 2003-04 which increased to 3,71,474 in 2011-12. The amount of sanctioned loan was Rs. 9728.64 lakhs in 2003-04 which was increased to the tune of Rs. 1,30,329.35 lakhs against the number of cards issued in the respective years. The scheme covered around 35.20 per cent of the total farm families (As per Agricultural census of 2005-06, total farm families stood at 27.50 lakhs in the state) of the state.

Farmers were also granted post harvest loans against negotiable warehouse receipts. In order to discourage distress sale by the farmers and to encourage them to store their produce in warehouses, the benefits of interest subvention has been extended to small and marginal farmers having KCC for a further period up to six months on the same rate as that of crop loan. However, there is no database available on post harvest loan in the state.

The Government of India has taken different initiatives to provide soft loan to the farmers since independence of the country. And consequently, lot of changes has taken place in the field agricultural finance. The resultant changes are to be assessed

from time to time so as ascertain the worthwhile use of different schemes launched by the Government.

Review of literature on prevailing credit system

India has systematically pursued a supply leading approach to increase agricultural credit. The objectives have been to replace moneylenders and relieve farmers of indebtedness and to achieve higher levels of agricultural credit, investment and agricultural output. Among earlier studies, Binswanger and Khandker (1992) found that the output and employment effect of expanded rural finance had been much smaller than in the non-farm sector. The effect on crop output was not large, despite the fact that credit to agriculture had strongly increased fertilizer use and private investment in machines and livestock. High impact on inputs and modest impact on output clearly meant that the additional capital investment had been more important for substituting agricultural labourers than in increasing crop output.

Between bank nationalization in 1969 and the onset of financial liberalization in 1990, bank branches were opened in over 30,000 rural locations which had no prior presence of commercial banks (called un-banked locations). Alongside, the share of bank credit and savings which was accounted for by rural branches raised from 1.5 and 3 per cent respectively to 15 per cent each (Burgess and Pande, 2005). This branch expansion was an integral part of India's social banking experiment which sought to improve the access of the rural poor to cheap formal credit. The estimates suggested that a one per cent increase in the number of rural banks can bring about reduction in poverty roughly by 0.40 per cent and increase in total output by 0.30 per cent. The output effects were solely accounted for by increase in non-agricultural output – a finding which suggests that increased financial intermediation in rural India aided output and employment diversification out of agriculture.

In a detailed paper, Mohan (2006) examined the overall growth of agriculture and the role of institutional credit. Agreeing that the overall supply of credit to agriculture as a percentage of total disbursal of credit is going down, he argued that this should not be a cause for worry as the share of formal credit as a part of the agricultural GDP is growing. This establishes that while credit is increasing, it has not really made an impact on value of output figures which points out the limitations of credit.

In another study, Golait (2007) attempted to analyze the issues in agricultural credit in India. The analysis revealed that the credit delivery to the agriculture sector

continues to be inadequate. It appeared that the banking system is still hesitant on various grounds to purvey credit to small and marginal farmers. It was suggested that concerted efforts were required to augment the flow of credit to agriculture, alongside exploring new innovations in product design and methods of delivery, through better use of technology and related processes. Facilitating credit through processors, input dealers, NGOs, *etc*., that were vertically integrated with the farmers, including through contract farming, for providing them critical inputs or processing their produce, could increase the credit flow to agriculture significantly.

In general, it is difficult to establish a causal relationship between agricultural credit and production due to the existence of critical endogenous problem. However, Sreeram (2007) concluded that increased supply and administered pricing of credit help in increase in agricultural productivity and well being of agriculturists as credit is a sub-component of the total investments made in agriculture. Borrowings could in fact be from multiple sources in the formal and informal space. Borrowing from formal sources is a part of this sub-component. With data being available largely from the formal sources of credit disbursal and indications that the formal credit as a proportion of total indebtedness is going down, it becomes much more difficult to establish the causality. He also stated that the diversity in cropping patterns, holding sizes, productivity, regional variations make it difficult to establish such a causality for agriculture or rural sector as a whole, even if one had the data. Finally, he argued that mere increase in supply of credit is not going to address the problem of productivity, unless it is accompanied by investments in other support services. In the present study, we take a re-look at the problem by quantitatively assessing the impact of institutional credit expansion on agriculture.

Despite numerous problems in agricultural credit system, the finance bill tabled by the Union Finance Minister fixed a target of Rs. 8 lakh crore for agricultural credit during 2014-15 and he was confident that the banks would surpass the target. He also proposed to continue the Interest Subvention Scheme for short term under which banks are providing loans to farmers at concessional rate of 7 per cent interest. The farmers get a further incentive of 3 per cent for timely repayment. He also categorically pointed out that the share of long term investment credit in agriculture is going down as compared to short term crop loan. This is severely hampering the assets creation in agriculture and allied activities. In order to boost long term investment credit in agriculture, he proposed to set up “Long Term

Rural Credit Fund" under NABARD for the purpose of providing refinance support to Cooperative Banks and Regional Rural Banks with an initial corpus of Rs.5000 crore. (The Economic Times, July 11, 2014)

Based on an interview with CVR Rajendran, CMD, Andhra Bank the Economics Times on August 18, 2014 explicitly made a head line that the political promise of loan waiver has spoilt the credit culture. Whole interview was on the agricultural credit status in Andhra Pradesh. But the main problems in credit were almost similar to that of the other states. He commented that farm loans are slipped into NPAs because neither the Government nor the farmers are paying any attention. (The Economic Times, August 11, 2014)

Agricultural Debt Waiver and Debt Relief Scheme (ADWDRS) actually work against the interests of the poor farmers. As most of them have no land records, many are share croppers, and none of them can afford high cost inputs, they all stand disqualified from receiving ADWDRS benefits. But that is not all. What makes this scheme unbelievable is that it also keeps out those who have repaid the past debt in time.

Quite clearly, the whole policy was designed to help the willful wrongdoers who were relatively prosperous and not resource starved. A cursory walk through a village will tell us that almost every farmer, rich or poor, is indebted. The better off usually borrow from institutional lenders, like bank of one kind or the other, and it is precisely these people who take advantage of loan waiver.

Experience reflects that the bulk of the poor still depend on the money lenders. Sadly, there are no policies that can make these debts disappear: instead their chokehold gets stronger on the other hand, it is better off that slip through. They take bank loan, wait for election time and, bingo, they become debt free and ready to borrow again. Once again, no lesson is learnt. (The article "When it's right to be wrong" published in the Times of India on January 3, 2015 by Dipnakar Gupta, the Director of Centre for Public Affairs and Critical Theory, Shiv Nadar University.)

As reported by the bank officials, the recovery of agricultural advances made by the banks has not been satisfactory because of poor management skill of borrower-farmers, inadequate supervision of lending institutes and agriculture Departments and also for crop failure due to abiotic and biotic factors.

Importance of the study

Way back in 1947, Pt. Nehru said, everything else can wait, but not agriculture. Agriculture continues to be the mainstay for majority of Indian population and is at core of socio-economic development of the country. Accelerated agricultural progress is therefore, essential for food and nutritional security. Over the years, Indian agriculture has made rapid strides from food shortages and imports to self-sufficiency and exports. It has moved from subsistence farming to intensive and technology-led cultivation. Modern agriculture however, is capital intensive. Non-availability of timely credit has been a major drawback for the agricultural sector in India. In a country which mostly relies on agriculture, constant endeavors are needed to see that rural and agricultural facilities are enhanced with the passage of time. Without sufficient credit support, growth of agriculture cannot be accelerated particularly looking into the status of capital-starved farmers at large. In this back drop, KCCs got introduced in the agricultural lending system. Later it was observed that the farmers lying in the higher end of the pyramid received access to these schemes while the marginal and small one still remained underprivileged.

The present study will highlight the borrower's economic status on availing the credit and will assess the overall impact farm credit. It will also focus on whether the present credit system is able to attract the educated youth towards agriculture as a profession, and if not, what are the reasons therein.

Need of the study

The new technology in agriculture along with infrastructural facilities is a must for development of present agriculture & allied sectors. To attract the educated youths to farming sector and allied activities, agriculture must be made commercially remunerative and for that purpose, application of full technology package is of immense importance. The fact remains that the majority of the common farmers cannot afford to acquire modern inputs and agricultural implements from their own source which are essential for adoption of improved technology in agriculture. Sometimes poor farmers have to borrow from the village money lenders at exorbitantly high rate of interest which badly affect the farmers. Obviously, Crop loan and KCC are better options for the farmers for augmenting development in agriculture. After 12 years of its implementation in Assam, it will be an important study to see the status and impact of the credit schemes in bringing about changes in the life of the farmers, economically or otherwise.

Objectives of the Study

The study was undertaken in the state of Assam with the following objectives:

1. To study the Schemes in general and its status and pattern of utilization.
2. To identify the problems faced by the farmers in obtaining the credit card and also to ascertain the problems, if any in the flow of agricultural credit by different agencies.
3. To examine the impact of economic achievement gained through utilization of Agricultural Credit covering the KCC and Crop Loan Scheme.
4. To assess the recovery status against the scheme.
5. To suggest policy implications.

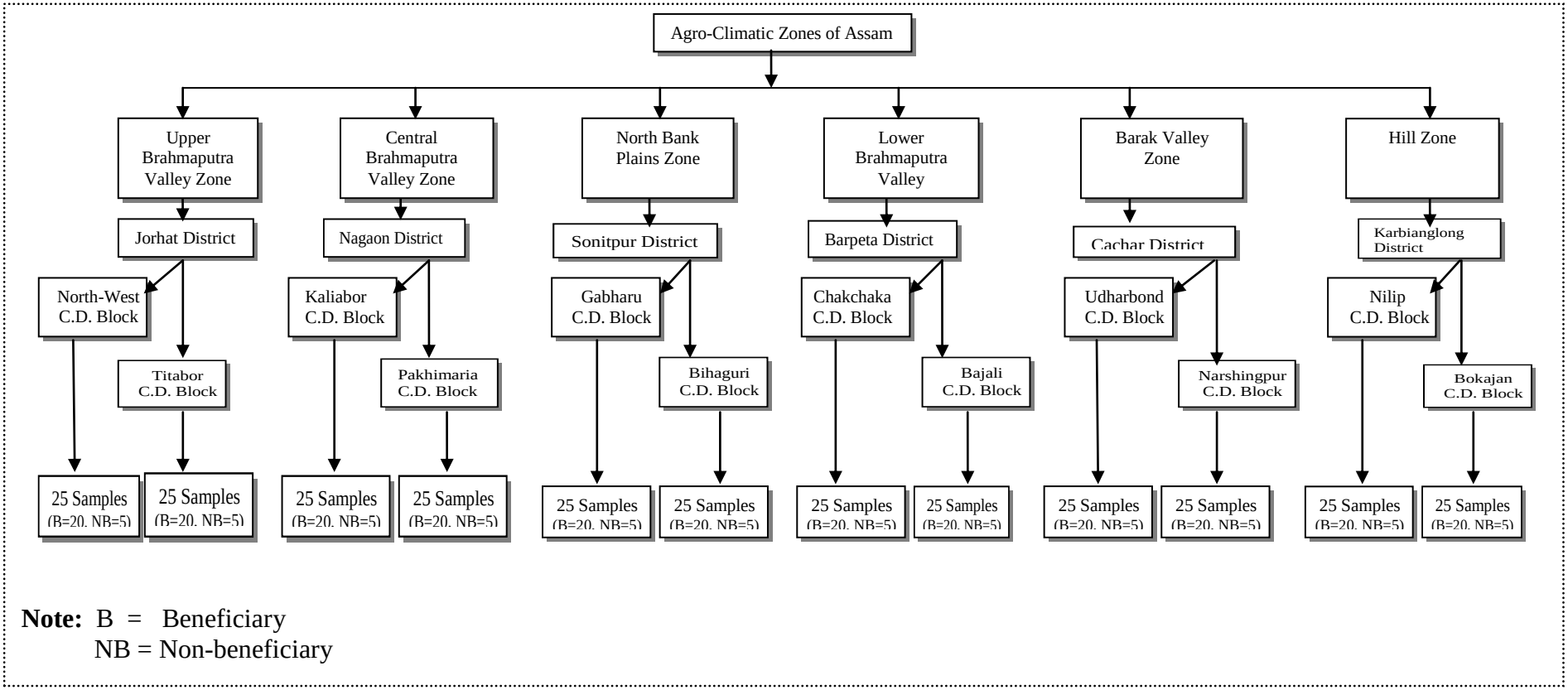
Research Methodology

The study was based on both primary and secondary level data. Impact of crop loan as a whole was done on the secondary level data only and the impact of crop loan under the KCC scheme was done on the primary level data. The primary level data were collected from six different districts of Assam, one from each agro-climatic zone. From each district, two blocks were selected purposively. Then from each block 20 KCC beneficiaries were selected randomly from the lists of the beneficiary farmers provided by the 4 banks operating in the study area *viz.,*-Assam Gramin Bikash Bank/Langpi Dehangi Rural Banks, Cooperative Apex Bank, State Bank of India and United Bank of India. Also, 5 non-beneficiary farmers were selected from each of the blocks. In aggregate, the study covered 300 sample farmers covering six different districts.

The detailed flow chart of the sampling method has been presented in the Fig-1 overleaf:

Fig-1

Flow Chart of the Sampling Method



Note: B = Beneficiary
NB = Non-beneficiary

Secondary data were collected from the published and unpublished report of the Government also from the financial institutions associated with the study.

The primary data were collected with the help of a specially designed schedule filled up by personally interviewing the selected respondents. Suitable statistical tools were used as and where felt necessary.

To find out the factors influencing the farmers for accessing credit under the KCC scheme, the following logistic Linear Regression Model was applied by taking binary dependent variables '1' for beneficiary and '0' for non- beneficiary.

The Logistic Regression Model is -

$$\text{In}\left[p(X)/1\text{-}p(X)\right] = \beta_0 + \sum \beta_i X_i ; \qquad i = 1,2,3,\ldots\ldots\ldots 10$$

Where,

β_0 = Constant

$\beta_1, \beta_2, \cdots\cdots\cdots\cdots, \beta_n$ (the co-efficient of independent variables) where,

X_1 = Age

X_2 = Up to primary (I-V)

X_3 = Up to X

X_4 = HSLC passed

X_5 = HSSLC passed

X_6 = Graduate & above

X_7 = Family size

X_8 = Operational Holding

X_9 = Income from farming

X_{10} = Ratio of Irrigated to the total operational area

X_{11} = Farm asset value (Rs.)

Reference Year

2013-14

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Summary

The study entitled “Impact of Credit on Agricultural Production with Special Reference to Crop loan and KCC Schemes- An Empirical study in Assam” was under taken to examine the status and utilization of agricultural credit in the state of Assam with the following objectives:

1. To study the Schemes in general and its status and pattern of utilization.
2. To identify the problems faced by the farmers in obtaining the credit card and also to ascertain the problems, if any in the flow of agricultural credit by different agencies.
3. To examine the impact of economic achievement gained through utilization of Agricultural Credit covering the KCC and Crop Loan Scheme.
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The study was based on both primary and secondary level data. Impact of crop loan as a whole was done on the secondary level data only and the impact of crop loan under the KCC scheme was done on the primary level data. The primary level data were collected from six different districts of Assam, one from each agro-climatic zone. From each district, two blocks were selected purposively. A random sample of 25 was selected from each block, comprising 20 KCC beneficiaries which were selected from the list of the beneficiary farmers provided by the 4 banks operating in the study area *viz.*-Assam Gramin Bikash Bank/Langpi Dehangi Rural Banks, Cooperative Apex Bank, State Bank of India and United Bank of India and 5 non beneficiary farmers of the same locality. In aggregate, the study covered 300 sample comprising 240 beneficiary and 60 non-beneficiary farmers. To find out the factors influencing the farmers for accessing credit under the KCC scheme, the logistic Linear Regression Model was applied by taking binary dependent variables ‘1’ for beneficiary and ‘0’ for non- beneficiary.

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CHAPTER - II

Present status of Agriculture in Assam

Agriculture & allied sector plays an important role in the economic growth of Assam. Farmers and agricultural labourers are the main players of the agricultural sector. This sector alone provides employment to 49.35 per cent of the total working force in the state. Agriculture assumes vital importance for food security of 3.12 crore population of Assam (Table-2.1).

Table-2.1
Status of Farmers in the Total Working Force of the State in 2011
(Combining Main and Marginal Workers)

(Population in Lakh)

Total population	Total Working Population	Total work force engaged in Agriculture	Percentage of agricultural working force to the total working force in the state
312.06	119.70	59.07	49.35 (52.36 in 2001)

Source: Agricultural Statistics at a glance 2013, MoA, GoI.

Every agricultural worker in Assam is capable of feeding 6.17 persons per annum in the state in terms of food-grains (Estimated, Table-2.2). Despite having such capability, the average income of this segment of the population is not sufficient enough to maintain the minimum standard of living. They are unable to earn adequate income from cultivation to access the basic requirement of power, water, sanitation, healthcare, education and housing. They are contributing a lot to feed the growing population without getting any recognition except on papers. The present policy initiatives of the state appear to be inadequate to ensure development of the farming community. They are engaged in agriculture as there is no other option in front of them. The most pathetic condition of the farmers is that they cannot fix the prices of their produces. The loss and profit are determined by the traders only. They are also quite ignorant about the existing market regulation act for agricultural commodities of the state. Besides, farmers often fall into a debt-trap due to crop failure because of natural disasters like draught, heavy rainfall, *etc*. The existing compensatory provisions do not reach the farmers for various administrative reasons. In order to help the farmers in distress, the NDA Government has recently proposed for fixing the minimum extent of damage from 50 per cent to 33 per cent to become eligible for compensation against crop failure. Also, the banks have been instructed to restructure the loans of the farmers in distress. It will be shameful for all of us if we fail to safe guard the interest of the farmers who used to produce food for our survival.It is

paradoxical to note that India continues to be agriculture based economy and yet the farmers are not able to maintain the minimum standard of lving.

Table-2.2

Estimated per capita Contribution of Agricultural Workers in Total Food-grain Production in 2010-11 in Assam

Total work force engaged in Agriculture (In lakh population)	Total food-grains Production in the state (In lakh tonnes)	Estimated per worker contribution in food-grain production in the state. (In quintal)	Per Capita annual requirement of food grains (395 gm per day per capita requirement) (In quintal)	Estimated number of persons supported by each agricultural worker in terms food grains production per annum
59.07	**51.78**	**8.76**	**1.42**	**6.17**

Source: Agricultural Statistics at a glance 2013, MoA, GoI.

The trend of growth of agriculture sector in terms of GSDP at constant prices (2004-05) is presented in Table-2.3. The share of agriculture sector is showing a gradual fall from 21.39 per cent in 2005-06 to 17.77 per cent in 2013-14. It is due to sustained progress of the secondary and tertiary sectors of the state. But the annual average growth of the GSDP has shown a significant rise from 3.40 per cent in 2005-06 to 5.87 per cent in 2013-14. The increase in production and productivity of the crops are the two reasons behind of the increase in the average annual growth of the GSDP in the state (Table -2.3).

Table-2.3
Trend of growth of agriculture sector (GSDP at constant prices 2004-05) (Excluding Fishery, Forestry & Logging and Mining) in Assam

Year	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12 (P)	2012-13 (Q)	2013-14 (ADV.)
Share to GSDP	21.39	20.78	20.43	19.56	19.11	18.40	18.31	18.01	17.77
AGR	3.40	4.65	4.82	5.72	9.00	7.26	5.33	6.06	5.87

Source: Statistical Hand Book, DES, Govt. of Assam

The percentage distribution of number of operational holding across the farm size groups in Assam and all India as per agricultural census in 2005 and 2011 is presented in Table-2.4. The number of holding in terms of percentage has been found to increase in case of marginal category in 2010-11 over 2005-06 in the state and in the country as well and it has shown a decline in other categories. It is apprehended

that division of land holding among the farm family members with the passage of time would create grave situation in near future.

Therefore it needs a diagnostic review to see whether it should be allowed to go as it is or is needed to be stopped at a point. But another important observation is that whatever may be the size of holding under each category, the land holding covers a larger area extended to the nearby villages. Moreover, the use of power tiller and tractor becomes always difficult for pre dominance of marginal and small holdings in the field as the use of bullock power is fast disappearing in the recent time. Use of machine power in crop field usually reduces the cost of maintaining bullocks by the small and marginal farm households.

Table-2.4
Percentage distribution of number of operational holdings across the farm size groups in Assam and all India as per Agricultural Census

State/India	Agricultural Census 2005-06					Agricultural Census 2010-11				
	Marginal	Small	Semi -medium	Medium	Large	Marginal	Small	Semi -medium	Medium	Large
Assam	63.74	21.51	11.56	3.02	0.18	67.31	18.25	11.16	3.12	0.15
All India	64.77	18.52	10.93	4.93	0.85	67.04	17.93	10.05	4.25	0.73

Source: Statistical Hand Book DES, Govt. of Assam

Table-2.5 shows a comparative picture of the percentage variation in number of farm families and operational holding during 2010-11 to 2005-06 in Assam and at all India level. In Assam, the number of operational holding and the area showed a negative trend at the rate of 1.09 and 1.62 per cent, respectively while in case of India, it indicated an increasing trend at the rate of 6.61 and 0.54 per cent against number and area, respectively. It has been observed that 0.30 lakh of farm families of Assam had shifted from farming in 2010-11 and the operational land holding was found to

Table-2.5
Number and Area of Operational holdings for all size groups of farmers in the state and all India as per Agricultural Census

Number in Lakh
Area in Lakh Hectare

State/India	2010-11		2005-06		Percentage Variation	
	Number	Area	Number	Area	Number	Area
Assam	27.20	29.99	27.50	30.49	-1.09	-1.62
India	1377.57	1591.80	1292.22	1583.23	6.61	0.54

Source: Statistical Hand Book DES, Govt. of Assam

reduce by 0 .50 lakh hectare. It might be due to conversion of agricultural land for other purposes. But all India data shows that with the increase in number of farm families, the area of operation increased nominally *i.e.* in some of the states, the picture of number and area of operational holding is not similar to that of Assam.

Table-2.6
Percentage distribution of operational holdings for all social groups in the state and all India as per Agricultural Census

State/India	Agricultural Census 2005-06					Agricultural Census 2010-11				
	Marginal	Small	Semi -medium	Medium	Large	Marginal	Small	Semi -medium	Medium	Large
Assam	24.93	23.56	27.75	13.95	9.80	25.83	22.91	27.27	14.58	9.39
All India	20.23	20.91	23.94	23.11	11.82	22.24	22.07	23.59	21.18	10.92

Source: Agricultural Statistics at a glance 2013, MoA, GoI.

The percentage distribution of area operated was found to decrease in respect of small, semi-medium and large size groups in 2010-11 over 2005-06 but in marginal and medium size group, it showed a nominal increase during the period (Table-2.6).

Table -2.7
Average size of operational holding for all social groups

(In ha.)

State/India	Agricultural Census 2005-06						Agricultural Census 2010-11					
	Marginal	Small	Semi - medium	Medium	Large	All Size group	Marginal	Small	Semi -medium	Medium	Large	All Size group
Assam	0.43	1.21	2.66	5.13	60.92	1.11	0.42	1.38	2.69	5.15	68.11	1.10
All India	0.38	1.38	2,68	5.74	17.08	1.23	0.38	1.42	2.71	5.76	17.37	1.16

Source: Agricultural Statistics at glance 2013, MoA, GoI.

In the state, the average size of operational holding was found almost static in case of marginal, small, semi-medium and medium size groups while it was found to increase from 60.92 hectare in case of the large farm size group in 2005-06 to 68.11 hectare in 2010-11 showing an increase of 7.19 hectares over 2005-06.

Table-2.8
Extent of change in cropping intensity in Assam

(Area in ha.)

Year	Gross Cropped Area	Net Cropped Area	Cropping Intensity
2003-04	3956842	2752601	143.75
2004-05	3896357	2752979	141.53
2005-06	3949040	2752979	143.45
2006-07	3763284	2752979	136.70
2007-08	3838732	2752979	139.44
2008-09	3998734	2810443	142.28
2009-10	4099462	2810597	145.86
2010-11	4159977	2810597	148.01
2011-12	4099462	2810597	145.86
ACGR	0.79	0.35	0.44

Source: Statistical Hand Book DES, Govt. of Assam

The average area of farm house hold of the state stood at 1.11 hectares in 2005-06 and 1.10 hectares in 2010-11. It was found at higher side in all India level with 1.23 and 1.16 hectares in 2005-06 and 2010-11, respectively (Table-2.7).

Table- 2.8 shows the extent of change in cropping intensity during 2003-04 to 2011-12 in the state. The highest cropping intensity of 148.01 per cent was found in 2010-11 and the lowest cropping intensity of 136.70 per cent was recorded in 2006-07.

Table-2.9
Trend of Production of crops in Assam

(in lakh tonnes)

Crops	2008-09	2009-10	2010-11	2011-12	2012-13	ACGR
Total Rice	40.09	44.09	50.33	47.16	51.28	5.76
Maize	0.13	0.14	0.14	0.17	0.21	12.22
Wheat	0.55	0.65	0.56	0.49	0.44	(-) 7.03
Other cereals and Small Millets	0.03	0.03	0.03	0.02	0.02	(-) 11.45
Total cereals	40.80	44.91	51.06	47.86	51.95	5.62
Total pulses	0.62	0.66	0.72	0.73	0.84	7.34
Total food- grains	41.42	45.57	51.78	48.57	52.79	5.64
Total oilseeds	1.41	1.47	1.59	1.56	1.87	6.44
Jute	6.47	7.13	6.26	6.08	5.58	(-) 4.45
Sugarcane (Cane. no.)	11.00	10.62	10.76	10.53	10.28	(-) 1.43
Potato	5.16	6.00	6.58	6.83	7.09	7.95

Source: Statistical Hand Book, DES, Govt. of Assam, 2013

The Annual Compound Growth Rate (ACGR) grew at the rate 0.79 per cent in case of gross cropped area, 0.35 per cent in case of net cropped area and 0.44 per cent in case of cropping intensity during the reference period. The cropping intensity increased due to increase in area under summer paddy, pulses, oilseeds and vegetables.

The production of agricultural crops basically depends on the availability of inputs like fertilizers, irrigation, certified seeds, credit support and appropriate price factors. Among many other factors, the monsoon determines the amount of production in a year especially for *kharif* crops. In *rabi* season, the level of production is determined by the availability irrigation facility in the crop filed. A positive ACGR of production was found in case of total rice (5.76%), maize (12.22%), total cereals (5.62%), total pulses (7.34%), total food grains (5.64%), total oilseeds (6.44%) and potato (7.95%) during 2008-09 to 2012-13. And a negative ACGR of production was recorded against wheat (-7.03), other cereals and Small Millets (-11.45), jute (-4.45) and sugarcane (-1.43). Both biotic and abiotic factors might be responsible for declining production during the reference years (Table-2.9).

From the Table-2.10, it has been observed that the crop productivity in Assam is yet to catch up the productivity level of all India. However, positive annual compound growth rate of some crops *viz.* total rice (5.04%), wheat (2.28%), total pulses (0.75%), total food grains (4.28%), total oilseeds (3.75%), potato (2.02%) indicated a rising trend of productivity. But the crops like maize, jute & mesta and sugarcane showed negative annual compound growth rate of 0.77, 4.61 and 2.02 per cent, respectively. It needs constant endeavour to bridge the gap between the productivity levels. In this context, it may be noted that 93 per cent of growth in

Table-2.10
Trend of major Yield rate of crops of Assam Vis a Vis India during 2008-09 to 2012-13 Yield in Kg per hectare

Total Rice						
Year	2008-09	2009-10	2010-11	2011-12	2012-13	ACGR
Assam	1,614	1,737	1,843	1,780	2,039	3.71
All India	2,178	2,125	2,239	2,393	2,462	3.19
Maize						
Year	2008-09	2009-10	2010-11	2011-12	2012-13	ACGR
Assam (Kharif)	724	726	722	719	700	-0.77
All India(Rabi& Kharif)	2,414	2,024	2,540	2,478	2,553	3.19
Wheat						
Year	2008-09	2009-10	2010-11	2011-12	2012-13	ACGR
Assam	1,090	1,087	1,179	1,147	1,188	2.28
All India	2,907	2,839	2,989	3,177	3,119	2.57
Total Pulses						
Year	2008-09	2009-10	2010-11	2011-12	2012-13	ACGR
Assam	567	560	555	573	582	0.75
All India	659	630	691	699	786	4.67
Total Food- grains						
Year	2008-09	2009-10	2010-11	2011-12	2012-13	ACGR
Assam	1,551	1,662	1,763	1,704	1,889	4.28
All India	1,909	1,798	1,930	2,078	2,125	3.68
Total Oilseeds						
Year	2008-09	2009-10	2010-11	2011-12	2012-13	ACGR
Assam	542	526	576	557	633	3.75
All India	1,006	958	1,193	1,133	1,169	4.79
Jute & Mesta						
Year	2008-09	2009-10	2010-11	2011-12	2012-13	ACGR
Assam	1,866	1,898	1,698	1,612	1,599	-4-61
All India	2,071	2,349	2,192	2,283	2,338	2.16
Sugercane						
Year	2008-09	2009-10	2010-11	2011-12	2012-13	ACGR
Assam	38,387	39,110	36,196	37,055	35,612	-2.02
All India	64,553	70,020	70,091	71,668	66,988	0.98
Potato						
Year	2008-09	2009-10	2010-11	2011-12	2012-13	ACGR
Assam	6,585	7,263	7,735	6,978	7,425	2.02
All India	18,810	19,951	22,724	21,753	22,784	4.81

Source: 1.Agricultural Statistics at glance 2013, MoA, GoI.

food grains production in the world since 1950 has come through increase in yield. Raising the crop productivity at least to the national level is a major challenge for state agriculture and once it is met, can ultimately give some relief to the poor farmers of the state.

Summary

Agriculture & allied sector plays an important role in the economic growth of Assam. This sector alone provides employment to 49.35 per cent of the total working force in the state. Agriculture assumes vital importance for food security of 3.12 crore

population of Assam as per 2011 census. Every agricultural worker in Assam is capable of feeding 6.17 persons per annum in the state in terms of food-grains (Estimated). The trend of growth of agriculture sector in terms of GSDP at constant prices (2004-05) is presented in Table-2.3. The share of agriculture sector is showing a gradual fall from 21.39 per cent in 2005-06 to 17.77 per cent in 2013-14. It is due to sustained progress of the secondary and tertiary sectors of the state. But the annual average growth of the GSDP has shown a significant rise from 3.40 per cent in 2005-06 to 5.87 per cent in 2013-14. The increase in production and productivity of the crops are the two reasons behind the increase in the average annual growth of the GSDP in the state.

The number of holding in terms of percentage has been found to increase in case of marginal category in 2010-11 over 2005-06 in the state and in the country as well and it has shown a decline in other categories. It is apprehended that division of land holding among the farm family members with the passage of time would create grave situation in near future.

In the state, the average size of operational holding was found almost static in case of marginal, small, semi-medium and medium size groups while it was found to increase from 60.92 hectares in case of the large farm size group in 2005-06 to 68.11 hectares in 2010-11 showing an increase of 7.19 hectares over 2005-06. The average area of farm house hold of the state stood at 1.11 hectares in 2005-06 and 1.10 hectares in 2010-11. It was found at higher side in all India level with 1.23 and 1.16 hectares in 2005-06 and 2010-11, respectively. The highest cropping intensity of 148.01 per cent was found in 2010-11 and the lowest cropping intensity of 136.70 per cent was recorded during 2006-07. The Annual Compound Growth Rate (ACGR) grew at the rate 0.79 per cent in case of gross cropped area, 0.35 per cent in case of net cropped area and 0.44 per cent in case of cropping intensity during the reference period. The cropping intensity increased due to increase in area under summer paddy, pulses, oilseeds and vegetables.

A positive ACGR of production was found in case of total rice (5.76%), maize (12.22%), total cereals (5.62%), total pulses (7.34%), total food grains (5.64%), total oilseeds (6.44%) and potato (7.95%) during 2008-09 to 2012-13. And a negative ACGR of production was recorded against wheat (-7.03), other cereals and Small Millets (-11.45), jute (-4.45) and sugercane (-1.43). Both biotic and abiotic factors might be responsible for declining production during the reference years. It has been

observed that the crop productivity in Assam is yet to catch up with that of all India level. However, positive annual compound growth rate of some crops *viz.* total rice (5.04%), wheat (2.28%), total pulses (0.75%), total food grains (4.28%), total oilseeds (3.75%), potato (2.02%) indicated a rising trend of productivity. But the crops like maize, jute & mesta and sugarcane showed negative annual compound growth rate of 0.77, 4.61 and 2.02 per cent, respectively. It needs constant endeavour to bridge the gap between the productivity levels. In this context, it may be noted that 93 per cent of growth in food grains production in the world since 1950 has come through increase in yield. Raising the crop productivity at least to the national level is a major challenge for state agriculture and once it is met, can ultimately give some relief to the poor farmers of the state.

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Chapter III

Socio-Economic profile of the sample beneficiaries and non beneficiaries

This chapter deals with some of the important socio-economic characteristics of the sample of beneficiaries (borrowers) and non-beneficiaries (non-borrowers) drawn from six different districts of Assam. Table-3.1 highlights the socio-economic characteristics between the sample beneficiary and non-beneficiary respondents across different farm size groups in terms of percentages. The highest percentage of beneficiary respondents (48.33 per cent) was found in small size groups followed by marginal (32.50 per cent), medium (17.92 per cent) and large size group (1.25 per cent). A similar pattern was observed in case of non-beneficiary farmers as well. In case of non-beneficiaries, the highest percentage (55.00 per cent) of respondents were found in small size groups followed by marginal (26.67%), medium (11.67%) and large size group (6.67%).

The dwelling house is one of the three primary needs of the human being. It indicates a reasonable level of the living standard of the people. Of the total beneficiary respondents, in overall, 13.75 per cent were found to live in *kutcha* house, 35.42 per cent in *semi-pucca* house and 50.83 per cent in *pucca* house. Of the non-beneficiary respondents, in overall, 16.67 per cent were found to live in *kutcha* house, 30.00 per cent in *semi-pucca* and 53.33 per cent in *pucca* houses. The percentage of pucca houses was found in the higher side in all the 3 lower size group of armers. In large size group, it was 100.00 per cent for both beneficiary and non-beneficiary farmers.

From the sociological point of view, marital status indicates whether the farmers are able to maintain the conjugal life on time or not. Of the total beneficiary respondents, 87.92, 7.92 and 4.17 per cent were found as married, unmarried and widower, respectively. There was no report of divorcees or widow among the respondents. In case of non-beneficiary, 96.67 and 3.33 per cent were found as married and unmarried, respectively. There was no report of any widowers and divorcees in this group.

Age is a measuring stick of efficiency of a person for performing any kind of works. Maturity and responsibility of a person also have a close linkage with the age. Of the total beneficiary respondents, in the age group of less than 25 years, 1.28 per cent belonged to marginal and 3.45 per cent to small size group of operational holding. No respondents were found in this age group for other size groups of

farmers. A large majority of beneficiary and non-beneficiary respondents belonged to the age groups of 25-40 years and above 40 years. On an average, 42.50 per cent beneficiary respondents and 26.67 per cent non-beneficiary respondents were in the age group of 25-40 years while 55.42 per cent of beneficiary respondents and 73.33 per cent of non-beneficiary respondents were in the age group above 40 years.

Table -3.1
Socio-Economic Profile of the Sample beneficiaries and non beneficiary Farmers

Characteristics		Marginal (Less than 1.00 ha.)		Small (1.00 ha.-2.00 ha)		Medium (2.00 ha.-4.00 ha.)		Large (4.00 ha. & above)		Total (Over all)	
		B	NB	B	NB	B	NB	B	NB	B	NB
No. of Respondents		78	16	116	33	43	7	3	4	240	60
(%)		(32.50)	(26.67)	(48.33)	(55.00)	(17.92)	(11.67)	(1.25)	(6.67)	(100.00)	(100.00)
Type of the dwelling house (in percentage)	Kutcha	10.26	6.25	13.79	27.27	20.93	0.00	0.00	0.00	13.75	16.67
	Semi-pucca	28.21	31.25	40.52	33.33	37.21	28.57	0.00	0.00	35.42	30.00
	Pucca	61.54	62.50	45.69	39.39	41.86	71.43	100.00	100.00	50.83	53.33
Marital Status (in percentage)	Married	88.46	100.00	86.21	93.94	90.70	100.00	100.00	100.00	87.92	96.67
	Un-married	6.41	0.00	10.34	6.06	4.65	0.00	0.00	0.00	7.92	3.33
	Widower	5.13	0.00	3.45	0.00	4.65	0.00	0.00	0.00	4.17	0.00
	Widow	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Divorcee	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Age (in percentage)	Less than 25 years	1.28	0.00	3.45	0.00	0.00	0.00	0.00	0.00	2.08	0.00
	25- 40 years	43.59	31.25	44.83	24.24	32.56	28.57	66.67	25.00	42.50	26.67
	Above 40 years	55.13	68.75	51.72	75.76	67.44	71.43	33.33	75.00	55.42	73.33
Educational Status (in percentage)	Illiterate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Up to primary	30.77	6.25	36.21	30.30	44.19	0.00	33.33	0.00	35.83	18.33
	Up to X	29.49	31.25	22.41	39.39	13.95	85.71	0.00	50.00	22.92	43.33
	HSLC passed	14.10	43.75	13.79	9.09	6.98	14.29	0.00	25.00	12.50	20.00
	HSSLC passed	17.95	12.50	21.55	18.18	30.23	0.00	33.33	25.00	22.08	15.00
	Graduate & above	7.69	6.25	6.03	3.03	4.65	0.00	33.33	0.00	6.67	3.33
Type of cultivator (in percentage)	Owned land	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	Tennant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subsidiary occupation (in percentage)	Yes	100.00	100.00	93.10	90.91	88.37	85.71	100.00	100.00	94.58	93.33
	NO	0.00	0.00	6.90	9.09	11.63	14.29	0.00	0.00	5.42	6.67

Source: Primary data
Note: B= Beneficiary & NB= Non-beneficiary

The level of education of the respondents is considered to be an important indicator for proper assessment of the study area. In the table, the educational status of the respondents had been classified into 6 levels of standards from illiterate up to graduate level and above. In the field survey, no respondents were found to be illiterate in both the groups. The respondents farmers educated up to primary standard, the highest (44.19 per cent) being found in the medium size group and the lowest (30.77 per cent) in the marginal size group for beneficiary respondents. At overall level, it stood at 35.83 per cent. In case of non-beneficiary respondents, in the same standard, the highest (30.30 per cent) were found in the small size group and the lowest (6.25 per cent) were found in the marginal size group and in overall, it was at

18.33 per cent. In up to X standard, no record of beneficiary respondents was found in the large farm size groups and the highest (29.49 per cent) number of respondents was recorded in the small size group. At overall level, it was found at 22.92 per cent. In case of non--beneficiary respondents in the same standard, the highest, 85.71 per cent were found in the medium size group and the lowest (31.25 per cent) were found in the marginal size group with an overall figure of 43.33 per cent. In HSLC passed standard, the number of beneficiary respondent was nil in the large farm size group and the highest (14.10 per cent) found in small size group with an average of 12.50 per cent. In the same standard in respect of non-beneficiary respondents, the highest (43.75 per cent) were found in the marginal group and the lowest (9.09 per cent) were found in the medium size group with an average 20.00 per cent. In HSSLC passed standard, the highest (33.33 per cent) were found against the large farm size group and the lowest (21.55 per cent) were found against the small size group with an average of 22.08 per cent. In the same standard the overall figure stood at 15 per cent in case of beneficiary respondents. In graduate & above standard, the highest (33.33 per cent) number of beneficiary farmers was found against the large size group of farm and the lowest (4.65 per cent) was found against the medium size group of farm with an overall figure 6.67 per cent across the farm size groups. In the same standard, the highest (6.25 per cent) number of non-beneficiary farmers was found against the marginal group and 3.03 per cent against the small size group with an overall average of 3.33 per cent across the all farm size groups. From the findings it can be deduced that the respondents of the study were fairly educated.

Land is the main resource of farmers upon which a farm family survives. All the respondent farmers possessed own land in each of the groups. In the study area, there were no tenant cultivators. Further, all the respondent farmers were found to have subsidiary occupations in each of the size groups. In marginal and large size categories, 100 per cent respondents had subsidiary occupation against both the groups. At overall level, 94.58 per cent of the beneficiary respondents had the subsidiary occupations and the figure stood at 93.33 per cent for non-beneficiary respondents. The agricultural & allied activities such as poultry, fishery, piggery, broiler farm, *etc* and other economic activities such as vegetable vendors, carpenters, wage labourers, petty shops, *etc.* were included as subsidiary occupations of the respondents.

Table-3.2 shows the demographic and the educational status of the respondent's families across the farm size groups. In case of the beneficiary families, the highest (53.24 per cent) of male populations were found in small size group

Table - 3.2
Demographic and Educational status of the Sample beneficiary and non-beneficiary Farm Families

Particulars		Marginal (Less than 1.00 ha.)		Small (1.00 ha.-2.00 ha)		Medium (2.00 ha.-4.00 ha.)		Large (4.00 ha. & above)		Total (Overall)	
		B	NB	B	NB	B	NB	B	NB	B	NB
Family size	Male	210	46	394	102	143	22	11	14	758	184
	(%)	52.37	51.69	53.24	52.58	49.48	55.00	47.83	53.85	52.17	52.72
	Female	191	43	346	92	146	18	12	12	695	165
	(%)	47.63	48.31	46.76	47.42	50.52	45.00	52.17	46.15	47.83	47.28
	Total	401	89	740	194	289	40	23	26	1453	349
	Avg.size	5.14	5.56	6.38	5.88	6.72	5.71	7.67	6.50	6.05	5.82
Proportion of population	Below 15 years	36.41	31.46	35.68	31.44	33.22	25.00	30.43	30.77	35.31	30.66
	Male	52.05	57.14	50.38	54.10	48.96	60.00	42.86	62.50	50.49	56.07
	Female	47.95	42.86	49.62	45.90	51.04	40.00	57.14	37.50	49.51	43.93
	Above15 years	63.59	68.54	64.32	68.56	66.78	75.00	69.57	69.23	64.69	69.34
	Male	52.55	49.18	54.83	51.88	49.74	53.33	50.00	50.00	53.09	51.24
	Female	47.45	50.82	45.17	48.12	50.26	46.67	50.00	50.00	46.91	48.76
Educational Status of the farm families in percentage	Illiterate	10.35	4.88	6.71	6.18	10.61	7.89	9.52	8.00	8.54	6.19
	Class I-V	23.71	21.95	21.91	19.10	18.94	21.05	23.81	24.00	21.84	20.43
	ClassVI-VIII	19.35	19.51	21.16	19.10	23.86	28.95	23.81	12.00	21.24	19.81
	Class IX-X	18.26	20.73	17.14	16.85	14.39	15.79	14.29	20.00	16.86	17.96
	HSLC Passed	17.17	18.29	18.78	21.91	15.53	18.42	14.29	20.00	17.61	20.43
	HSSLC Passed	8.72	12.20	12.82	15.17	13.64	5.26	9.52	12.00	11.79	13.00
	Graduate	2.45	2.44	1.49	1.69	2.65	2.63	4.76	4.00	2.04	2.17
	Post Graduate	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.08	0.00
	Technical Education	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Percentage of Children Below 6 years		8.48	7.87	9.32	8.25	8.65	5.00	8.70	3.85	8.95	7.45

Source: Primary data

Note: B= Beneficiary & NB= Non-beneficiary

followed by marginal (52.37%), medium (49.48%) and large size group (47.83%) with an average of 52.17 per cent. For the non-beneficiary families, the highest male population of 55.00 per cent were found against medium size group followed by the large (53.85%), small (52.58%) and marginal size group (51.69%) with an average of 52.72 per cent of male population. The highest female population of 52.17 per cent for beneficiary families was found in large farm size group and the lowest (46.76 per cent) were found in the small size group with an average of 47.83 per cent. For non-beneficiary families, the highest (48.31 per cent) female population was found in the marginal size group and the lowest (45.00 per cent) in medium size group with an average of 47.28 per cent. In brief, the male population dominated over female

population by 4.34 per cent for beneficiary and by 5.44 per cent for non-beneficiary population of the respondent families.

Amongst the beneficiary families, the highest average family size of 7.67 persons per family was recorded against the large farm size group and the lowest (5.14 persons per family) were found against the marginal size group. The highest (6.50 persons per family) family size, in case of non-beneficiary families was found in the large farm size group and the lowest (5.56 persons per family) in the marginal size group. The overall family size stood at 6.05 persons for beneficiary families and 5.82 persons for non-beneficiary families. On an average the family size was neither very big nor too small.

The educational status of the farm families was studied, excluding the children below 6 years. On an average, the population of children below 6 years stood at 8.95 per cent for beneficiary and 7.45 per cent for non-beneficiary group. The highest (10.61 per cent) illiterate persons was found in medium size group followed by marginal (10.35%), large (9.52%) and small (6.71%) size group with an overall average of 8.54 per cent for beneficiary farm population. In case of non-beneficiary families, the highest illiteracy of 8 per cent was found against the large farm size group followed by medium (7.89%), small (6.18%) and marginal (4.88%) size group with an average of 6.19 per cent. Thus, the illiteracy percentage was found higher by 2.35 per cent for beneficiary than that of the non-beneficiary farm population. In Class I-V standard, the highest (23.81 per cent) no. of persons was found against the large size group followed by marginal (23.81%), medium (18.94%) and small (21.91%) size group with an overall average of 21.84 per cent for beneficiary farm population while for the non-beneficiary, the highest (24.00 per cent) no. of persons was found against the large size group followed by marginal (21.95%), medium (21.05%) and small (19.10%) size group with an overall average of 20.43 per cent which was lesser by 1.41 per cent over the beneficiary population.

In Class VI-VIII standard, the highest (23.86 per cent) no. of persons was recorded in the medium size group followed by the large farm (23.81%),small (21.16%), and marginal (19.35%) size group with an overall average of 21.24 per cent for beneficiary farm population while for the non-beneficiaries, the highest (28.95 per cent) were found against the medium size group followed by marginal (19.51%), medium (19.10%) and large farm (12.00%) size group with an overall

average of 19.81 per cent and was lesser by 1.43 per cent over the beneficiary farms population.

In the Class IX-X standard, the highest (18.26 per cent) no. of persons was found against the marginal size group followed by small (17.14%), medium (14.39%) and large size (14.29%) group with an overall average of 16.86 per cent for beneficiary farm population while for the non-beneficiaries, the highest (20.73 per cent) was found against the small size group followed by large (20.00%), small (16.85%) and medium (15.79%) size group with an overall average of 17.96 per cent which was higher by 1.10 per cent over the beneficiary population.

In the HSLC passed standard, the highest percentage (17.17 per cent) of beneficiary farm families were noticed in the marginal size group followed by small farm (18.78%), medium (15.53%) and the large size (14.29%) group with an overall average of 17.61 per cent while for the non-beneficiaries, the highest (21.91 per cent) no. of persons was found against the small size group followed by large (20.00%), medium (18.42%) and small (18.29%) size group with an overall average of 20.43 per cent which was higher by 2.82 per cent over the beneficiary farm population.

In the HSSLC passed standard, the highest (13.64 per cent) no. of persons was found in the medium size group followed by small (12.82%), large (9.52%) and marginal size (8.72%) group with an overall average of 11.79 per cent for beneficiary farm population while for the non-beneficiaries, the highest (15.17 per cent) no. of persons was found against the small size group followed by marginal (12.20%), large (12.00%) and medium (5.26%) size group with an overall average of 13.00 per cent, which was higher by 1.21 per cent over the beneficiary farm population.

In the Graduate standard, the overall share of beneficiary and non-beneficiary farmers were 2.04 per cent and 2.17 per cent, respectively. The highest number of graduates was found in the large farm size group for both the beneficiary and non-beneficiary farmers.

Only 0.38 per cent of the beneficiary farmers possessed post graduate degree, and that too in medium size group. No family members in the study area had technical education.

Ownership of land is one of the important criteria which indicates the economic status of the farmers in the villages. But the quantum of land owned has been decreasing with passage of time due to division of farm families and selling of

land on account of social event or medical expenditure for the treatment of the family members. As a result, numbers of marginal and small farm families are increasing in the villages. It needs suitable policy initiatives to check further divisions of land.

Table - 3.3
Land holding Status of the Sample beneficiary and non-beneficiary Household
(Area in hectare)

Particulars	Marginal (Less than 1.00 ha.)		Small (1.00 ha.-2.00 ha)		Medium (2.00 ha.-4.00 ha.)		Large (4.00 ha. & above)		Total (Overall)	
	B	NB	B	NB	B	NB	B	NB	B	NB
Total Owned Land	60.64	13.86	167.60	43.04	111.91	19.01	18.07	20.35	358.23	96.25
Owned land per HH	0.78	0.87	1.44	1.30	2.60	2.72	6.02	5.09	1.49	1.60
Area under own operational holding	54.48	12.45	156.76	40.29	107.03	18.07	17.54	19.34	335.81	90.16
Irrigated area	6.36	0.94	24.43	4.02	8.63	3.28	8.17	5.22	47.59	13.45
Un-Irrigated area	48.13	11.51	132.26	36.28	98.39	14.79	9.37	14.12	288.15	76.71
Area under leased in/ Mortgaged in	1.61	0.40	9.37	3.61	13.45	1.81	2.81	0.00	27.24	5.82
Irrigated area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Un-Irrigated area	1.61	0.40	9.37	3.61	13.45	1.81	2.81	0.00	27.24	0.00
Area under leased out/ Mortgaged out	0.00	0.00	4.89	0.00	10.71	0.00	0.00	0.00	15.60	0.00
Irrigated area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Un-Irrigated area	0.00	0.00	4.89	0.00	10.71	0.00	0.00	0.00	15.60	0.00
Net Irrigated area	6.36	0.94	24.43	4.02	8.63	3.28	8.17	5.22	47.59	13.45
% of net irrigated area to net operated area	11.34	7.29	15.16	9.15	7.87	16.50	40.13	26.99	13.70	14.02
Net operated Area	56.09	12.85	161.18	43.91	109.77	19.88	20.35	19.34	347.39	95.98
Average Net Operated Area	0.72	0.80	1.39	1.33	2.55	2.84	6.78	4.84	1.45	1.60

Source: Primary data
Note: B= Beneficiary & NB= Non-beneficiary

Table-3.3 visualizes the land holding status and the area under irrigation in respect of the sample beneficiary and non-beneficiary households across the different farm size groups. The total owned land includes homestead, orchard and field cropped area. The average size of owned land holding stood at 1.49 hectares for beneficiary and 1.60 hectares for non-beneficiary household. The overall total area under owned operational holding was recorded at 335.81 hectares and 90.16 hectares for beneficiary and non-beneficiary households, respectively. The total area under leased in or mortgaged in was found at 27.24 hectares for beneficiary households and 5.82 hectares for non-beneficiary households. The percentage of net irrigated area to net operated area was found to be the highest (40.13 per cent) in the large farm size group of beneficiary households followed by small (15.16 %), marginal (11.34%)

and medium (7.87 per cent) size group of holding with an overall average irrigated area of 13.70 per cent while in case of non-beneficiary households, the highest (26.99 per cent) net irrigated area was found in large farm size group followed by medium (16.50%) , small (9.15 %) and marginal (7.29%) size group of holding with an overall irrigated area of 14.02 per cent. The overall per household net operated area was 1.45 hectare and 1.60 hectare for beneficiary and non-beneficiary household, respectively. On the basis of the observations, it can be said that the irrigational status in the study area was not at satisfactory level for both the groups. The lower percentage of irrigated land under operation continues to be a matter of concern especially for adopting modern agricultural technology packages. The average net operated area of beneficiary farmers was found to be in higher side in case of small and large farm size groups as compared to non-beneficiary farmers. In other groups, it showed a reverse picture. Therefore, net operated area could not be the sole factor for credit seekers; there might be some other factors which really needed to be analyzed.

The type of agro-climatic condition, irrigation status, availability of required seeds on time, food habits, the social back ground, economic factors of the farmers, monetary gain per unit of area and policy initiatives of the Government are the key factors that basically determine the cropping pattern of a state. The crop season of Assam is divided into two main seasons- *Kharif* from April to September and *Rabi* from October to March. These two seasons follow different type of cropping pattern.

Table - 3.4.a
Season wise Cropping Pattern of the Sample Beneficiary and Non-beneficiary HHs

(Area in Ha.)

Farm Size → / Crops ↓	Marginal (Less than 1.00 ha.)		Small (1.00 ha.-2.00 ha)		Medium (2.00 ha.-4.00 ha.)		Large (4.00 ha. & above)		Total (Overall)	
	B	NB	B	NB	B	NB	B	NB	B	NB
Kharif season(April to September)										
Paddy	50.48	11.69	146.67	39.52	100.99	18.29	18.52	17.80	316.66	87.30
Pulses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vegetables	1.68	0.32	5.64	1.32	2.74	0.60	0.71	0.58	10.78	2.82
Jute	2.80	0.51	4.84	2.20	4.39	0.70	0.92	0.68	12.95	4.08
Sugercane	0.56	0.12	4.03	0.44	1.32	0.20	0.20	0.19	6.11	0.95
Rabi season (October to March)										
Paddy	16.83	3.86	48.35	12.73	38.42	5.96	5.09	4.84	108.69	27.39
Pulse	1.68	0.32	4.84	0.88	2.20	0.70	0.71	0.77	9.43	2.67
Vegetables	3.37	0.71	11.28	3.29	8.78	1.69	1.73	1.45	25.16	7.14
Oilseeds (Mustard)	1.96	0.45	7.25	1.76	4.94	0.70	1.32	1.16	15.48	4.06
Gross Cropped area	**79.37**	**17.99**	**232.90**	**62.13**	**163.78**	**28.83**	**29.20**	**27.47**	**505.25**	**136.41**
Net Cropped Area	**56.09**	**12.85**	**161.18**	**43.91**	**109.77**	**19.88**	**20.35**	**19.34**	**347.39**	**95.98**
Cropping Intensity	**141.50**	**139.95**	**144.50**	**141.50**	**149.20**	**145.00**	**143.50**	**142.00**	**145.44**	**142.12**

Source: Primary data
Note: B= Beneficiary & NB= Non-beneficiary

Table- 3.4a depicts the cropping pattern of the sample beneficiary and non-beneficiary farmers across the different farm size groups in terms of area under

different crops under *kharif* and *rabi* season separately. The gross cropped area is the total area under different crops grown in two seasons for the reference year under study. Areas under different crops of sample beneficiaries were at much higher side than that of the non-beneficiaries because of the fact that the number of households in respect of beneficiaries was more than that of the non-beneficiaries. The worked out cropping intensity was found higher amongst the beneficiary farmers in all the size groups as compared to non-beneficiary farmers. One of the reasons might be the effect of the KCC scheme in operation. Amongst the beneficiary farmers, the cropping intensity was the highest (149.20 per cent) in the medium group followed by small (144.50%), large(143.50%) and marginal (141.50%) size group while for non-beneficiary farmers, the highest (145.00 per cent) cropping intensity was recorded in the medium farm size group followed by large (142.00%), small (141.50%) and marginal (132.95%) size group. The overall cropping intensity stood at 145.44 per cent for beneficiary and 142.12 per cent for non-beneficiary farmers. Cropping intensity indicates aggregate production level of the crops grown in the state and in the present context, the analysis reveals a moderate picture.

Table -3.4.b
Season wise Cropping Pattern of the sample beneficiary HHs (% to GCA)

Farm Size Crops	Marginal		Small		Medium		Large		Total	
	(Less than 1.00 ha.)		(1.00 ha.-2.00 ha)		(2.00 ha.-4.00 ha.)		(4.00 ha. & above)		(Overall)	
	B	NB	B	NB	B	NB	B	NB	B	NB
Kharif season(April to September)										
Paddy	63.60	65.02	62.98	63.60	61.66	63.45	63.41	64.79	62.67	64.00
Pulses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vegetables	2.12	1.79	2.42	2.12	1.68	2.07	2.44	2.11	2.13	2.06
Jute	3.53	2.86	2.08	3.53	2.68	2.41	3.14	2.46	2.56	2.99
Sugercane	0.71	0.68	1.73	0.71	0.80	0.69	0.70	0.70	1.21	0.70
Rabi season (October to March)										
Paddy	21.20	21.44	20.76	20.49	23.46	20.69	17.42	17.61	21.51	20.08
Pulse	2.12	1.79	2.08	1.41	1.34	2.41	2.44	2.82	1.87	1.96
Vegetables	4.24	3.93	4.84	5.30	5.36	5.86	5.92	5.28	4.98	5.23
Oilseeds (Mustard)	2.47	2.50	3.11	2.83	3.02	2.41	4.53	4.23	3.06	2.98
% Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Primary data
Note: B= Beneficiary & NB= Non-beneficiary

Table- 3.4b gives the percentage distribution of the area under different crops to the gross cropped area for the reference year (2014-15) under study. Analysis indicates that the *kharif* paddy (direct seeded normal *ahu*, transplanted normal *ahu*, *sali* and *bao* paddy) was the dominant crop in the *kharif season* followed by *rabi* paddy (summer) in the *rabi* season. Among all the paddy crops, *sali* paddy covers maximum crop area of the state *i.e.*, more than 60 per cent of the gross cropped area of the state in each crop year. In Assam, *kharif* pulses are also grown but no sample

farmers reported about the cultivation of *kharif* pulses during field investigation. Growing of *rabi* pulses was very common among most of the farmers, but the area under this crop was not found large enough as compared to the other crops .The area under *kharif* vegetables was found less than that of *rabi* vegetables. Both the vegetables were cultivated for home consumption and for sale in the local market. The *kharif* vegetables included lady's finger, bottle gourd, ridge gourd, spike gourd, white gourd, snake gourd, cucumber, leafy vegetables, *etc.* and the *rabi* vegetables grown were brinjal, cabbage, cauliflower, knol-khol, pumpkin, tomato, potato, leafy vegetables, green peas, *etc*. Pulses included green gram, red gram and black gram. Jute and sugarcane were grown as cash crops.

Jute is an important crop of the Central and Lower Brahmaputra Valley Zone and sugarcane is cultivated in almost all the districts of Assam. But the area under sugarcane is declining because of its replacement by small tea gardens in the state. Oilseeds (mustard) are grown in the North Bank Plain Zone, Central Bank and the Lower Brahmaputra Valley Zones. In the sample beneficiary households, the percentage area under *kharif* paddy varied between 61.66 and 63.60 per cent in the different farm size groups with an average of 62.67 per cent while in non beneficiary households, it lied between 63.45 and 65.02 per cent with an average of 64.00 per cent. The percentage of area under *kharif* vegetables for beneficiary households varied between 1.68 and 2.44 per cent in the different farm size groups with an average of 2.13 per cent while in case of non beneficiary households, it varied between 1.79 and 2.11 per cent with an overall average of 2.06 per cent. The percentage of area under jute for beneficiary households varied between 2.68 and 3.53 per cent in the different farm size groups with an overall average of 2.56 per cent while in non beneficiary households, it ranged between 2.46 and 3.53 per cent with an overall average of 2.99 per cent. The percentage of area under sugarcane for beneficiary households varied between 0.70 and 1.73 per cent in the different farm size groups with an overall average of 1.21 per cent while in non beneficiary households, it ranged between 0.68 and 0.70 per cent with an overall average of 0.70 per cent.

The cropping pattern during *rabi* season reflects that for beneficiary households, the area under paddy varied from 23.46 to 17.42 per cent with an overall average of 21.51 per cent while for non beneficiary households, it ranged between 17.61 and 21.44 per cent with an overall average of 20.08 per cent. The area under pulses for beneficiary households varied from 1.34 to 2.44 per cent with an overall average of 1.87 per cent of the gross cropped area. The area under pulses for non-

beneficiary households varied between 1.41 and 2.82 per cent across the farm size groups with an overall average of 1.96 per cent of the gross cropped area. It can be seen that there were more area under *rabi* vegetables than that of the *kharif* vegetables.

As the state is situated in heavy rainfall zone, the damage of crops on account of heavy shower is very common for which probably, the area under *kharif* vegetables had declined. No significant difference of area under *rabi* vegetables had been noticed between the beneficiary and non-beneficiary farmers. The percentage of area under oilseeds (mustard) for beneficiary farmers varied between 2.47 and 4.53 per cent across the different farm size groups with an overall average of 3.06 per cent. In case of non-beneficiary farmers, the area varied from 2.41 to 4.23 per cent across size groups with an overall average of 2.98 per cent.

Table- 3.5 gives area, production and productivity of crops cultivated by the beneficiary and non-beneficiary farmers across the farm size groups. As per KCC guidelines, the loans were sanctioned against some specific crop only, but the benefitted farmers on query, reported that they had also diverted some amount to meet the immediate needs for other cultivated crops as well. It was felt necessary to make an assessment on the production and productivity of the crops grown by the two groups in order to see the impact of the credit scheme. In Assam, farmers cultivate both HYV and local paddy. But the area under local paddy is decreasing on account of yield difference between HYV and local paddy. Overall analysis of beneficiary data indicates that of the total paddy area (316.66 Ha.) during *kharif* season, HYV and local paddy covered 86.68 and 13.32 per cent, respectively. In case of non-beneficiary farmers, of the total paddy area (87.30 ha.), the area under HYV paddy stood at 83.88 per cent and the area under local paddy stood at 16.12 per cent of the total *kharif* paddy area. All the sample farmers were seen to cultivate HYV paddy (summer paddy) during *rabi* season. In the *Kharif* season, the highest performance (yield rate) of HYV paddy with 48.18 quintal per hectare was found against the small size group for the beneficiary farmers and in case of non-beneficiary farmers, the highest (45.57 quintal per hectare) productivity was recorded in the same farm size group. The overall yield rate of HYV paddy stood at 47.16 quintal per hectare for beneficiary and 44.23 quintal per hectare for non-beneficiary farmers. Thus the yield rate was found to be higher by 2.93 quintal per hectare for the beneficiary farmers as compared to non-beneficiary farmers. In case of local paddy during *kharif* season, no significant differences in yield rates were seen in both the groups. On an average, 24.05 quintal per hectare was the yield obtained by the beneficiary farmers as against

23.61 quintal per hectare in case of the non-beneficiary farmers with a marginal increase of 0.44 quintal per hectare only. In *rabi* season paddy, the highest yield was recorded against small size group with 50.76 quintal per hectare and 48.25 quintal per hectare for non-beneficiary farmers. The overall yield rate stood at 49.59 quintal per hectare for beneficiary and 46.68 quintal per hectare for non-beneficiary farmers with a yield difference of 2.91 quintal per hectare for beneficiary group. In *kharif* vegetables, the highest yield rate of 31.25 quintal per hectare was noticed for

Table-3.5
Season wise Area Production and Yield of Crops of the Sample Beneficiaries and Non-beneficiaries

(Area in Ha., Production in Qtls. & Yield in Qtls/Ha.)

Farm Size ➡ / Crops ⬇		Marginal (Less than 1.00 ha.)		Small (1.00 ha.-2.00 ha)		Medium (2.00 ha.-4.00 ha.)		Large (4.00 ha. & above)		Total (Overall)	
		B	NB	B	NB	B	NB	B	NB	B	NB
Kharif season(April to September)											
Paddy (HYV)	A	43.67	9.82	129.36	33.00	85.44	15.36	16.02	15.04	274.49	73.22
	P	2071.32	425.62	6232.99	1503.60	3925.07	674.79	715.49	634.69	12944.86	3238.70
	Y	47.43	43.33	48.18	45.57	45.94	43.92	44.67	42.21	47.16	44.23
Paddy (Local)	A	6.82	1.87	17.31	6.52	15.55	2.93	2.50	2.76	42.17	14.08
	P	164.58	44.40	419.70	155.84	370.93	68.12	59.19	64.00	1014.41	332.36
	Y	24.15	23.73	24.25	23.90	23.85	23.28	23.68	23.20	24.05	23.61
Total Paddy	A	50.48	11.69	146.67	39.52	100.99	18.29	18.52	17.80	316.66	87.30
	P	2235.90	470.02	6652.69	1659.44	4296.00	742.92	774.68	698.69	13959.27	3571.06
	Y	44.29	40.19	45.36	41.99	42.54	40.62	41.84	39.26	44.08	40.91
Vegetables	A	1.68	0.32	5.64	1.32	2.74	0.60	0.71	0.58	10.78	2.82
	P	51.88	9.76	176.29	40.69	83.29	18.02	21.21	17.15	332.67	85.62
	Y	30.83	30.38	31.25	30.89	30.35	30.21	29.78	29.55	30.86	30.41
Jute	A	2.80	0.51	4.84	2.20	4.39	0.70	0.92	0.68	12.95	4.08
	P	48.69	8.52	84.81	36.99	72.32	11.48	14.60	10.74	220.41	67.73
	Y	17.36	16.58	17.54	16.85	16.47	16.50	15.94	15.86	17.02	16.59
Sugercane (in Molasses form)	A	0.56	0.12	4.03	0.44	1.32	0.20	0.20	0.19	6.11	0.95
	P	8.17	1.71	64.72	6.89	18.89	2.82	2.83	2.67	94.61	14.09
	Y	14.57	13.97	16.06	15.69	14.34	14.19	13.89	13.82	15.48	14.78
Rabi season (October to March)											
Paddy (HYV)	A	16.83	3.86	48.35	12.73	38.42	5.96	5.09	4.84	108.69	27.39
	P	832.95	180.63	2454.42	614.40	1869.15	274.93	233.24	208.58	5389.76	1278.53
	Y	49.50	46.85	50.76	48.25	48.65	46.10	45.85	43.13	49.59	46.68
Pulse	A	1.68	0.32	4.84	0.88	2.20	0.70	0.71	0.77	9.43	2.67
	P	10.42	1.88	30.46	5.25	13.13	4.01	4.02	4.29	58.03	15.43
	Y	6.19	5.85	6.30	5.98	5.98	5.76	5.65	5.55	6.16	5.78
Vegetables	A	3.37	0.71	11.28	3.29	8.78	1.69	1.73	1.45	25.16	7.14
	P	126.71	25.18	430.31	121.58	322.38	60.07	59.31	49.23	938.71	256.06
	Y	37.65	35.63	38.14	36.92	36.71	35.55	34.29	33.93	37.31	35.86
Oilseeds (Mustard)	A	1.96	0.45	7.25	1.76	4.94	0.70	1.32	1.16	15.48	4.06
	P	12.07	2.72	45.19	10.45	30.03	4.09	7.76	6.66	95.06	23.92
	Y	6.15	6.05	6.23	5.95	6.08	5.88	5.87	5.74	6.14	5.89

Source: Primary data
Note: B= Beneficiary & NB= Non-beneficiary

beneficiary farmers and 30.89 quintal per hectare for non-beneficiary farmers against the small size group. The overall yield rate stood at 30.86 quintal and 30.41 quintal per hectare for beneficiary and non-beneficiary farmers, respectively. A nominal increase was found for beneficiary farmers.

In *rabi* vegetables, the highest yield rate of 38.14 quintal per hectare was recorded for beneficiary farmers and 36.92 quintal per hectare for non-beneficiary

farmers against the small size group. The overall yield rate occurred at 37.31 and 35.86 quintal per hectare for beneficiary and non-beneficiary farmers, respectively. And 1.45 quintal was the yield difference between the beneficiary farmers and non-beneficiary farmers. The highest yield rate of jute with 17.54 quintal per hectare was recorded for beneficiary farmers and 16.85 quintal per hectare for non-beneficiary farmers against the small size group of farmers. The overall yield rate stood at 17.02 quintal and 16.59 quintal per hectare for beneficiary and non-beneficiary farmers, respectively. A marginal increase of 0.43 quintal was noticed in respect of the beneficiary farmers.

The highest yield rate (16.06 qtl./ha.) of sugarcane in terms of molasses was found against the small size group for beneficiary farmers and for non-beneficiary farmers, the highest yield rate (15.69 qtl./ha.) was recorded against the small size group with an average yield of 15.48 quintal and 14.78 quintal per hectare for beneficiary and non-beneficiary farmers, respectively. A nominal increase of 0.70 quintal was noticed in case of the beneficiary farmers. In Assam, pulses are grown in both the seasons but *rabi* pulses are very popular among the farmers. During field survey, no sample farmers were found to grow *kharif* pulses. The highest yield of 6.30 quintal per hectare was recorded against the small farm size group for beneficiary farmers and for non-beneficiary farmers, the same size group yielded highest productivity (5.98 qtl./ha). The overall yield rate stood at 6.16 quintal and 5.78 quintal per hectare for beneficiary and non-beneficiary farmers, respectively. An overall marginal increase of 0.38 quintal was seen in case of beneficiary farmers. Oilseeds productivity was found at 6.14 quintal and 5.89 quintal per hectare for beneficiary and non-beneficiary farmers, respectively. A marginal increase of 0.25 quintal per hectare was seen in case of the beneficiary farmers. From the table, it emerges that no significant visible differences were there in production and productivity of the crops between the two groups of respondent farmers, *viz.*, beneficiary and non- beneficiary farmers. However, the impact of credit as a whole upon the beneficiary farmers cannot be denied.

Table- 3.6a visualizes the gross return in terms of value of the crops and its by-product in respect of the sample beneficiary and non-beneficiary farmers. Here prices of the crops refer to the price received by the farmers at their farm gate. The price of each crop was worked out on by taking average of different prices prevalent in sample districts. No significant difference in prices of the crops was noticed during the

collection of primary level data. Accordingly, the prices were worked out at Rs.1,250/- per qtl. for *kharif* HYV paddy, Rs 1,050/- per qtl. for local *kharif* paddy, Rs 1,150/- per qtl. for *rabi* HYV paddy, Rs 1500/- per qtl. for *kharif* vegetables, Rs. 1,250/- per qtl. for *rabi* vegetables, Rs. 2,125/- per qtl. for jute, Rs 3,000/- per qtl. for sugarcane(in terms of *gur*), Rs. 4,500/- per qtl. for *rabi* pulses and Rs 3,000/- per qtl. for Mustard. In *kharif* paddy, the highest gross return of Rs.58,392.56 per hectare was found against the small size group with an overall average of Rs.56,666.74 per hectare for beneficiary farmers and in case of non-beneficiary respondents, the highest gross return (Rs.53,800.83 per hectare) was found again in the same size group with an overall average gross return of Rs.52,416.81 per hectare. In *rabi* paddy, the highest gross return of Rs.60, 912.00 per hectare was found against the small size group with an overall gross return of Rs.59,507.10 per hectare for beneficiary farmers and in case of non beneficiary farmers, the highest gross return of Rs.57,900 per hectare was found against the small size group with an overall gross return of Rs.56,016.89 per hectare.

In *kharif* vegetables, the highest gross return of Rs.46,875.00 per hectare was found against the small size group with an overall gross return of Rs.46,287.33 per hectare for beneficiary farmers and the highest gross return of Rs.46,335.00 per hectare was found against the same size group with an overall gross return of Rs.45617.29 per hectare for non-beneficiary farmers.

In *rabi* vegetables, the highest gross return of Rs.47,675.00 per hectare was found against the small size group with an overall average of Rs.46,638.31 per hectare for beneficiary farmers and the highest gross return of Rs.46,150.00 per hectare was recorded against the same size group with an overall gross return of Rs.44,825.76 per hectare for non-beneficiary farmers.

Jute and sugarcane are two important cash crops of the state grown in *kharif* season. The highest gross return from jute was found against the small size group with

Table-3.6a
Season wise Gross Return from the Produces of the Sample Beneficiaries and Non-beneficiaries

Farm Size ➡ Crops ⬇		Marginal (Less than 1.00 ha.)		Small (1.00 ha.-2.00 ha)		Medium (2.00 ha.-4.00 ha.)		Large (4.00 ha. & above)		Total (Overall)	
		B	NB	B	NB	B	NB	B	NB	B	NB
Kharif season(April to September)											
Paddy	Area	50.48	11.69	146.67	39.52	100.99	18.29	18.52	17.80	316.66	87.30
	Production (Value in Rs.)	2,761,957.92	578,645.27	8,231,920.08	2,043,132.99	5,295,809.61	915,021.50	956,513.84	860,557.09	17,246,201.45	4,397,356.86
	By-product (Value in Rs.)	111,794.99	23,501.03	332,634.42	82,972.04	214,799.81	37,145.85	38,734.11	34,934.25	697,963.33	178,553.17
	Gross Return (Value in Rs.)	2,873,752.91	602,146.31	8,564,554.50	2,126,105.03	5,510,609.42	952,167.35	995,247.95	895,491.35	17,944,164.78	4,575,910.03
	Gross Return per Ha.(Rs.)	56,926.37	51,488.47	58,392.56	53,800.83	54,565.55	52,061.85	53,748.57	50,318.34	56,666.74	52,416.81
Vegetables	Area	1.68	0.32	5.64	1.32	2.74	0.60	0.71	0.58	10.78	2.82
	Production (Value in Rs.)	77,817.89	14,640.96	264,432.73	61,035.66	124,934.74	27,025.21	31,813.17	25,722.74	498,998.53	128,424.58
	By-product (Value in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Gross Return (Value in Rs.)	77,817.89	14,640.96	264,432.73	61,035.66	124,934.74	27,025.21	31,813.17	25,722.74	498,998.53	128,424.58
	Gross Return per Ha.(Rs.)	46,245.00	45,570.00	46,875.00	46,335.00	45,525.00	45,315.00	44,670.00	44,325.00	46,287.33	45,617.29
Jute	Area	2.80	0.51	4.84	2.20	4.39	0.70	0.92	0.68	12.95	4.08
	Production (Value in Rs.)	103,459.91	18,111.49	180,225.26	78,610.78	153,675.90	24,395.90	31,015.78	22,817.99	468,376.85	143,936.15
	By-product (Value in Rs.)	1,217.18	213.08	2,120.30	924.83	1,807.95	287.01	364.89	268.45	5,510.32	1,693.37
	Gross Return (Value in Rs.)	104,677.08	18,324.56	182,345.56	79,535.61	155,483.86	24,682.91	31,380.67	23,086.44	473,887.17	145,629.52
	Gross Return per Ha.(Rs.)	37,324.00	35,647.00	37,711.00	36,227.50	35,410.50	35,475.00	34,271.00	34,099.00	36,603.63	35,673.14
Sugarcane	Area	0.56	0.12	4.03	0.44	1.32	0.20	0.20	0.19	6.11	0.95
	Production (Value in Rs.)	24,511.50	5,116.32	194,145.00	20,664.00	56,678.40	8,464.50	8,481.60	8,019.75	283,816.50	42,264.57
	By-product (Value in Rs.)	285.97	59.69	2,265.03	241.08	661.25	98.75	98.95	93.56	3,311.19	493.09
	Gross Return (Value in Rs.)	24,797.47	5,176.01	196,410.03	20,905.08	57,339.65	8,563.25	8,580.55	8,113.31	287,127.69	42,757.66
	Gross Return per Ha.(Rs.)	44,209.33	42,395.61	48,743.62	47,610.05	43,529.18	43,075.76	42,168.90	41,942.18	46,984.53	44,846.91

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Contd…./-

Table-3.6a

Season wise Gross Return from the Produces of the Sample Beneficiaries and Non-beneficiaries

Farm Size → / Crops ↓		Marginal (Less than 1.00 ha.)		Small (1.00 ha.-2.00 ha)		Medium (2.00 ha.-4.00 ha.)		Large (4.00 ha. & above)		Total (Overall)	
		B	NB	B	NB	B	NB	B	NB	B	NB
Rabi season (October to March)											
Paddy	Area	16.83	3.86	48.35	12.73	38.42	5.96	5.09	4.84	108.69	27.39
	Production (Value in Rs.)	957,894.58	207,720.48	2,822,582.17	706,555.69	2,149,522.42	316,173.80	268,225.57	239,863.71	6,198,224.74	1,470,313.68
	By-product (Value in Rs.)	41,647.59	9,031.33	122,720.96	30,719.81	93,457.50	13,746.69	11,661.98	10,428.86	269,488.03	63,926.68
	Gross Return (Value in Rs.)	999,542.17	216,751.81	2,945,303.13	737,275.50	2,242,979.92	329,920.48	279,887.55	250,292.57	6,467,712.77	1,534,240.36
	Gross Return per Ha.(Rs.)	59,400.00	56,220.00	60,912.00	57,900.00	58,380.00	55,320.00	55,020.00	51,756.00	59,507.10	56,016.89
Pulses	Area	1.68	0.32	4.84	0.88	2.20	0.70	0.71	0.77	9.43	2.67
	Production (Value in Rs.)	46,872.47	8,457.83	137,081.93	23,631.81	59,079.52	18,034.70	18,107.23	19,324.70	261,141.14	69,449.04
	By-product (Value in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Gross Return (Value in Rs.)	46,872.47	8,457.83	137,081.93	23,631.81	59,079.52	18,034.70	18,107.23	19,324.70	261,141.14	69,449.04
	Gross Return per Ha.(Rs.)	27,855.00	26,325.00	28,350.00	26,910.00	26,910.00	25,920.00	25,425.00	24,975.00	27,705.22	26,020.53
Vegetables	Area	3.37	0.71	11.28	3.29	8.78	1.69	1.73	1.45	25.16	7.14
	Production (Value in Rs.)	158,387.05	31,480.32	537,891.43	151,979.92	402,974.56	75,088.67	74,134.34	61,532.19	1,173,387.38	320,081.10
	By-product (Value in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Gross Return (Value in Rs.)	158,387.05	31,480.32	537,891.43	151,979.92	402,974.56	75,088.67	74,134.34	61,532.19	1,173,387.38	320,081.10
	Gross Return per Ha.(Rs.)	47,062.50	44,537.50	47,675.00	46,150.00	45,887.50	44,437.50	42,862.50	42,412.50	46,638.31	44,825.76
Oilseeds (Mustard)	Area	1.96	0.45	7.25	1.76	4.94	0.70	1.32	1.16	15.48	4.06
	Production (Value in Rs.)	36,220.78	8,163.86	135,558.80	31,351.00	90,101.20	12,273.61	23,291.41	19,986.27	285,172.19	71,774.74
	By-product (Value in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Gross Return (Value in Rs.)	36,220.78	8,163.86	135,558.80	31,351.00	90,101.20	12,273.61	23,291.41	19,986.27	285,172.19	71,774.74
	Gross Return per Ha.(Rs.)	18,450.00	18,150.00	18,690.00	17,850.00	18,240.00	17,640.00	17,610.00	17,220.00	18,423.66	17,667.26

Source: Primary data

Note: B= Beneficiary & NB= Non-beneficiary

Rs.37,711.00 and Rs.36,227.50 per hectare for beneficiary and non-beneficiary farmers, respectively. The overall per hectare gross return stood at Rs.36,603.63 for beneficiary and Rs.35,673.14 for non-beneficiary farmers.

The highest gross return from sugarcane was recorded against the small size group with Rs.48,743.62 and Rs.47,610.05 per hectare for beneficiary for non-beneficiary farmers, respectively. The overall per hectare gross return stood at Rs.46,984.53 for beneficiary and Rs.44,846.91 for non-beneficiary farmers.

The highest gross return from pulses was found against the small size group with Rs.28,350.00 and Rs.26,910.00 per hectare for beneficiary for non-beneficiary farmers, respectively. The overall per hectare gross return stood at Rs.27,705.22 for beneficiary and Rs.26,020.53 for non-beneficiary farmers.

The highest gross return from oilseeds (mustard) was found against the small size group with Rs.18,690.00 for beneficiary farmers. For non-beneficiary farmers the highest return was obtained by the marginal size group of farmers (Rs. 18,150.00 per hectare). The overall per hectare gross return stood at Rs.18,423.66 for beneficiary and Rs.17,667.26 for non-beneficiary farmers.

Table-3.6b gives season wise aggregate gross value of all the crops grown by the sample beneficiary and non-beneficiary farmers across the farm size groups. In *kharif* season, the aggregate highest gross return of Rs.57,127.77 per hectare was found against the small size group of farm followed by marginal (Rs.55,484.22), medium (Rs. 53,437.52) and the large (Rs.52,438.53) size group with an overall gross return of Rs.55,423.42 for beneficiary farmers. In case of non-beneficiary farmers, the aggregate highest gross return of Rs.52,624.52 per hectare was found against the small size group of farm followed by medium (Rs.51,184.66), marginal Rs. (50,606.80) and the large (Rs.49,482.93) size group with an overall gross return of Rs. 51,421.40.

In *rabi* season, the aggregate highest gross return of Rs.59,621.45 per hectare was found against the small size group of farm followed by medium (Rs. 55,936.40), marginal (Rs.52,059.18) and the large (Rs.51,464.47) size group with an overall gross return of Rs.56,769.76 for beneficiary farmers. In case of non- beneficiary farmers, the aggregate highest gross return of Rs.57,605.53 per hectare was found against the small size group of farm followed by marginal (Rs.55,118.25), medium (Rs.53,270.59), and the large (Rs.48,366.23) size group with an overall gross return of Rs.54,492.81.

Table- 3.6b
Season wise Gross Return from the Produces of Sample Beneficiaries and Non-beneficiaries (All Crops)

[Crop Year: 2013-14]

Farm Size → / Crops ↓		Marginal (Less than 1.00 ha.)		Small (1.00 ha.-2.00 ha)		Medium (2.00 ha.-4.00 ha.)		Large (4.00 ha. & above)		Total (Overall)	
		B	NB	B	NB	B	NB	B	NB	B	NB
Kharif season(April to September)											
All Crops	Area	55.53	12.65	161.18	43.47	109.44	19.78	20.35	19.25	346.50	95.15
	Production (Value in Rs.)	29,67,747.22	6,16,514.04	88,70,723.08	22,03,443.43	56,31,098.65	9,74,907.11	10,27,824.39	9,17,117.57	184,97,393.34	47,11,982.16
	By-product (Value in Rs.)	1,13,298.13	23,773.80	3,37,019.74	84,137.95	2,17,269.01	37,531.61	39,197.95	35,296.26	7,06,784.83	1,80,739.62
	Gross Return (Value in Rs.)	30,81,045.35	6,40,287.84	92,07,742.82	22,87,581.38	58,48,367.66	10,12,438.72	10,67,022.35	9,52,413.84	192,04,178.17	48,92,721.78
	Gross Return per Ha.(Rs.)	55,484.22	50,606.80	57,127.77	52,624.52	53,437.52	51,184.66	52,438.53	49,482.93	55,423.42	51,421.40
Rabi season (October to March)											
All Crops	Area	23.84	5.33	71.72	18.66	54.34	9.05	8.85	8.22	158.75	41.26
	Production (Value in Rs.)	11,99,374.88	2,55,822.49	36,33,114.32	9,13,518.42	27,01,677.71	4,21,570.78	3,83,758.54	3,40,706.87	79,17,925.46	19,31,618.55
	By-product (Value in Rs.)	41,647.59	38,141.54	6,43,188.31	1,61,476.35	3,37,758.24	60,271.37	71,774.40	56,922.49	10,94,368.55	3,16,811.75
	Gross Return (Value in Rs.)	12,41,022.47	2,93,964.03	42,76,302.64	10,74,994.77	30,39,435.95	4,81,842.15	4,55,532.94	3,97,629.36	90,12,294.00	22,48,430.31
	Gross Return per Ha.(Rs.)	52,059.18	55,118.25	59,621.45	57,605.53	55,936.40	53,270.59	51,464.47	48,366.23	56,769.76	54,492.81
Combining the seasons *Kharif* & *Rabi* (April to March)											
All Crops	Area	79.37	17.99	232.90	62.13	163.78	28.83	29.20	27.47	505.25	136.41
	Production (Value in Rs.)	41,67,122.10	8,72,336.53	125,03,837.40	31,16,961.85	83,32,776.36	13,96,477.89	14,11,582.94	12,57,824.44	264,15,318.79	66,43,600.72
	By-product (Value in Rs.)	1,54,945.72	61,915.34	9,80,208.06	2,45,614.30	5,55,027.25	97,802.98	1,10,972.35	92,218.76	18,01,153.38	4,97,551.37
	Gross Return (Value in Rs.)	43,22,067.82	9,34,251.87	134,84,045.46	33,62,576.15	88,87,803.61	14,94,280.87	15,22,555.29	13,50,043.20	282,16,472.17	71,41,152.09
	Gross Return per Ha.(Rs.)	54,455.50	51,944.60	57,895.72	54,120.58	54,266.57	51,839.21	52,143.26	49,148.70	55,846.44	52,350.43

Source: Primary data
Note: B= Beneficiary & NB= Non-beneficiary

Combining *kharif* and *rabi* season, for beneficiary farmers (Table 3.6b) the aggregate per hectare gross return stood at of Rs.54,455.50 for marginal group, Rs.57,895.72 for small group, Rs.54,266.57 for medium group and Rs.52,143.26 for large group with an overall per hectare gross value of Rs.55,846.44.

In case of non-beneficiary farmers, the aggregate per hectare gross return was Rs.51,944.60 for marginal group, Rs.54,120.58 for small group, Rs.51839.21 for medium group and Rs.49,148.70 for large group with an overall per hectare gross value of Rs.52,350.43. Thus, the gross return of the total crop output for the beneficiary farmers was recorded to be higher by Rs.3,496.01 per hectare as compared to the non-beneficiary farmers.

Table - 3.7
Season wise percentage Share of Gross Return of All Crops of the Sample Beneficiaries and Non-beneficiaries

Farm Size → / % Share of Gross Return ↓	Marginal (Less than 1.00 ha.)		Small (1.00 ha.-2.00 ha)		Medium (2.00 ha.-4.00 ha.)		Large (4.00 ha. & above)		Total (Overall)	
	B	NB	B	NB	B	NB	B	NB	B	NB
All *Kharif* Crops to the Gross Output	71.29	68.53	68.29	68.03	65.80	67.75	70.08	70.55	68.06	68.51
All *Rabi* Crops to the Gross Output	28.71	31.47	31.71	31.97	34.20	32.25	29.92	29.45	31.94	31.49

Source: Primary data
Note: B= Beneficiary & NB= Non-beneficiary

Table- 3.7 indicates season wise percentage share of gross return from all the crops to the aggregate return from all crop output in the reference year. The gross return during *kharif* season for beneficiary farmers varied between 65.80 and 71.29 per cent with an average of 68.06 per cent to the aggregate gross return of all the crops across the different farm size groups. In case of non beneficiary farmers, it varied between 67.75 and 70.55 per cent with an average of 68.51 per cent to the aggregate gross return from all crops across the different farm size groups. The share of gross return during *kharif* season was significantly higher than that of the *rabi* season. In this regard some farmers of the sample areas opined that it happened due to lack of irrigation facilities in their areas and some farmers opined that the existing irrigation facilities were not sufficient enough to bring more area under plough. As a result, the area under *rabi* season had reduced. On the other hand, *kharif* paddy was the main traditional crop in the state. Farmers usually never leave any area fallow during *kharif* season. Quantum of rainfall is also a determining factor for production of the crops during the season. For these reasons, gross income during *kharif* season was found on the higher side.

Table- 3.8 gives the status of asset position of beneficiary and non-beneficiary farmers in terms of number and its present value (estimated on the basis of farmers' opinion) across the farm size groups. Of the total sample households, only one tractor was found in one of the large farms of the beneficiary households. Altogether, 13 power tillers were found in the study area, of which 8 belonged to sample beneficiary households and 5 belonged to non-beneficiary households. Of the total 60 diesel pump sets, 46 belonged to sample beneficiary households and 14 belonged to non-beneficiary households. Out of 12 electrical pump sets, 9 belonged to sample beneficiary households and 3 belonged to non-beneficiary households. Of the total 83 sprayers, 65 belonged to sample beneficiary households and 18 belonged to non-beneficiary households. Out of the total 22 weeders, 15 belonged to sample beneficiary households and 7 belonged to non-beneficiary households. Similarly, of the total 33 hand-carts, 26 belonged to sample beneficiary households and 7 belonged to non-beneficiary households. As reported by the farmers, they usually used wooden plough for land preparation, which was gradually replaced by hired power tiller and tractor. It also replaced the bullock power to a large extent. However, a few farmers still continued with the bullock as draught power. Of the total 66 bullocks (33 pairs), 52 (26 pairs) belonged to beneficiary households and 14 (7 pairs) belonged to non-beneficiary households. In the table, per hectare annual expenditure on capital goods were worked out taking depreciation @ 10 per cent and rate of interest on the capital goods @ 5 per cent. The estimated annualized capital cost incurred by beneficiary households were found at Rs.724.56, Rs 646.75, Rs 1,268.42, Rs.3,120.18 against the marginal, small, medium and large group of famers, respectively with an overall average of Rs.1,000.64 per hectare and for non-beneficiary farmers, it stood at Rs.715.23 for marginal, Rs.473.68 for small, Rs.1,250.47 for medium and Rs.2,598.10 for large farmers with an overall average of Rs.1,095.05 per hectare. Thus, the information compiled under this table is indicative of the states of mechanization in the study area, which however cannot be termed as satisfactory.

Table- 3.9 indicates the annual gross income of beneficiary and non-beneficiary farmers from agriculture and subsidiary occupations in the study area. In case of beneficiary farmers, of the total gross income of marginal farmers (Rs.90,20,567.82), the share of agricultural income was 47.91 per cent and the remaining income was generated from the subsidiary occupations. The share of agricultural income was 62.87 per cent and that of subsidiary occupation was 37.13 per cent of the total gross income against small size category (Rs. 2,14,46,285.46) for the beneficiary farmers. Of the total gross income of medium group of beneficiary

Table- 3.8
Status of the farm machinery/ equipment/Bullock power of the beneficiary and Non-beneficiaries Households

Items ↓ / Farm Size →		Marginal (Less than 1.00 ha.)		Small (1.00 ha.-2.00 ha)		Medium (2.00 ha.-4.00 ha.)		Large (4.00 ha. & above)		Total (Overall)	
		B	NB	B	NB	B	NB	B	NB	B	NB
Total No. of HHs →		78	16	116	33	43	7	3	4	240	60
Tractor	Nos	0	0	0	0	0	0	1	0	1	0
	Present Value	0.00	0.00	0.00	0.00	0.00	0.00	3,25,000.00	0.00	3,25,000.00	0.00
Power Tiller	Nos	0	0	2	0	4	1	2	4	8	5
	Present Value	0.00	0.00	1,88,500.00	0.00	8,45,500.00	98,620.00	2,10,000.00	4,12,000.00	12,44,000.00	5,10,620.00
Pump Set (Diesel)	Nos	5	2	25	6	13	3	3	3	46	14
	Present Value	47,500.00	18,400.00	2,33,750.00	53,100.00	1,15,050.00	26,850.00	28,650.00	26,550.00	4,24,950.00	1,24,900.00
Pump Set (Electrical)	Nos	0	0	3	1	5	1	1	1	9	3
	Present Value	0.00	0.00	43,950.00	17,250.00	69,750.00	15,250.00	19,000.00	17,320.00	1,32,700.00	49,820.00
Sprayer	Nos	8	3	31	5	20	5	6	5	65	18
	Present Value	9,600.00	3,450.00	38,285.00	5,275.00	23,500.00	4,875.00	6,120.00	5,375.00	77,505.00	18,975.00
Weeder	Nos	0	0	5	3	8	2	2	2	15	7
	Present Value	0.00	0.00	2,700.00	1,740.00	5,200.00	1,250.00	1,100.00	1,200.00	9,000.00	4,190.00
Hand cart	Nos	2	1	9	3	13	1	2	2	26	7
	Present Value	11,500.00	5,050.00	58,950.00	13,500.00	81,250.00	7,200.00	13,700.00	14,800.00	1,65,400.00	40,550.00
Plough	Nos	77	13	97	29	39	5	0	0	213	47
	Present Value	37,950.00	6,400.00	50,500.00	15,000.00	19,840.00	2,480.00	0.00	0.00	1,08,290.00	23,880.00
Spade	Nos	140	24	198	56	71	10	5	7	414	97
	Present Value	17,360.00	2,880.00	25,740.00	6,720.00	9,585.00	1,300.00	625.00	840.00	53,310.00	11,740.00
Sickle	Nos	145	30	210	60	75	12	6	8	436	110
	Present Value	10,150.00	2,160.00	16,800.00	4,500.00	6,000.00	924.00	468.00	560.00	33,418.00	8,144.00
Bullock	Nos	20	4	24	6	8	4	0	0	52	14
	Present Value	2,53,000.00	49,200.00	3,33,600.00	81,000.00	1,50,400.00	78,000.00	0.00	0.00	7,37,000.00	2,08,200.00
Total	Nos	397	77	604	169	256	44	28	32	1285	322
	Present Value	3,87,060.00	87,540.00	9,92,775.00	1,98,085.00	13,26,075.00	2,36,749.00	6,04,663.00	4,78,645.00	33,10,573.00	10,01,019.00
	Estimated Annualised Value (10%)	38,706.00	8,754.00	99,277.50	19,808.50	1,32,607.50	23,674.90	60,466.30	47,864.50	3,31,057.30	1,00,101.90
	5% annual intt.	1,935.30	437.70	4,963.88	990.43	6,630.38	1,183.75	3,023.32	2,393.23	16,552.87	5,005.10
	Total	40,641.30	9,191.70	1,04,241.38	20,798.93	1,39,237.88	24,858.65	63,489.62	50,257.73	3,47,610.17	1,05,107.00
	Estimated Annualised Value/Ha.	724.56	715.23	646.75	473.68	1,268.42	1,250.47	3,120.18	2,598.10	1,000.64	1,095.05

Source: Primary Data

Table- 3.9
Status of the Gross Income per Annum from Agriculture and Subsidiary Occupations of the Sample Beneficiary and Non-beneficiaries Households

Farm Size → / Source of Income ↓	Marginal (Less than 1.00 ha.)		Small (1.00 ha.-2.00 ha)		Medium (2.00 ha.-4.00 ha.)		Large (4.00 ha. & above)		Total (Overall)	
	B	NB	B	NB	B	NB	B	NB	B	NB
Total No. of HHs →	78	16	116	33	43	7	3	4	240	60
Agriculture (in Rs.)	43,22,067.82	9,34,251.87	134,84,045.46	33,62,576.15	88,87,803.61	14,94,280.87	15,22,555.29	13,50,043.20	282,16,472.17	71,41,152.09
Gross Income Per HH (in Rs.)	55,411.13	58,390.74	1,16,241.77	1,01,896.25	2,06,693.11	2,13,468.70	5,07,518.43	3,37,510.80	1,17,568.63	1,19,019.20
% to total Income	47.91	49.97	62.87	58.64	79.29	82.06	86.54	83.85	64.96	64.71
Subsidiary (in Rs.)	46,98,500.00	9,35,200.00	79,62,240.00	23,72,040.00	23,22,000.00	3,26,760.00	2,36,850.00	2,60,000.00	152,19,590.00	38,94,000.00
Gross Income Per HH (in Rs.)	60,237.18	58,450.00	68,640.00	71,880.00	54,000.00	46,680.00	78,950.00	65,000.00	63,414.96	64,900.00
% to total Income	52.09	50.03	37.13	41.36	20.71	17.94	13.46	16.15	35.04	35.29
Total	90,20,567.82	18,69,451.87	214,46,285.46	57,34,616.15	112,09,803.61	18,21,040.87	17,59,405.29	16,10,043.20	434,36,062.17	110,35,152.09
Gross Income Per HH	1,15,648.31	1,16,840.74	1,84,881.77	1,73,776.25	2,60,693.11	2,60,148.70	5,86,468.43	4,02,510.80	1,80,983.59	1,83,919.20
% to total Income	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Primary Data B=beneficiary NB=Non-beneficiary

farmers (Rs.1,12,09,803.61.), the share of agricultural income was 79.29 per cent and the share of subsidiary occupation was 20.71 per cent. Of the total gross income of large group of beneficiary farmers (Rs.17,59,405.29), the share of agricultural income was 86.54 per cent and the share of subsidiary occupation was 13.46 per cent. The overall share of income from agriculture stood at 64.96 per cent and income from subsidiary occupation stood at 35.04 per cent of the overall gross income.

For non-beneficiary farmers, of the total gross income (Rs.18,69,451.87) in case of marginal farmers, the share of agricultural income was 49.97 per cent and that of subsidiary occupation was 50.03 per cent. Of the total gross income of small farmers (Rs.57,34,616.15), the share of agricultural income was 58.64 per cent and the share of subsidiary occupation was 41.36 per cent. Of the total gross income (Rs.18,21,040.87) of medium group of farmers, the share of agricultural income was 82.06 per cent and the share of subsidiary occupation was 17.94 per cent. Of the total gross income (Rs.16,10,043.20) of large group of farmers, the share of agricultural income was 83.85 per cent and the share of subsidiary occupation was 16.15 per cent. The overall share of income from agriculture stood at 64.71 per cent and income from subsidiary occupation stood at 35.29 per cent of the overall gross income.

From the foregoing analysis it is observed that the subsidiary occupations played an important role in generating additional income in the study area. Further, a definite trend was observed across the different size group of farmers for both beneficiary and non-beneficiary households. The gross income from agriculture was found to increase with farm sizes while that from subsidiary occupation showed a declining trend with farm sizes for both beneficiary and non-beneficiary households.

Modern agriculture being capital intensive, can readily be practiced by the large size farmers, and because of resource crunch, the smaller farms might have to look for the subsidiary activities outside agriculture to garner more income.

Summary

This chapter deals with some of the important socio-economic characteristics of the sample of beneficiaries (borrowers) and non-beneficiaries (non-borrowers). The highest percentage of beneficiary respondents (48.33 per cent) was found in small size groups followed by marginal (32.50 per cent), medium (17.92 per cent) and large size group (1.25 per cent). A similar pattern was observed in case of non-beneficiary farmers as well. In case of non-beneficiaries, the highest percentage (55.00 per cent)

of respondents were found in small size groups followed by marginal (26.67%), medium (11.67%) and large size group (6.67%).

Of the total beneficiary respondents, in overall, 13.75 per cent were found to live in *kutcha* house, 35.42 per cent in *semi-pucca* house and 50.83 per cent in *pucca* house. Of the non-beneficiary respondents, in overall, 16.67 per cent were found to live in *kutcha* house, 30.00 per cent in *semi-pucca* and 53.33 per cent in *pucca* houses. The percentage of *pucca houses* were found in the higher side in all the three lower size groups of farmers. In large size groups it was 100.00 per cent for both beneficiary and non-beneficiary farmers.

Of the total beneficiary respondents, 87.92, 7.92 and 4.17 per cent were found as married, unmarried and widower, respectively. There was no report of divorcees or widow among the respondents. In case of non-beneficiary, 96.67 and 3.33 per cent were found as married and unmarried, respectively. There was no report of any widowers and divorcees in this group.

On an average, 42.50 per cent beneficiary respondents and 26.67 per cent non-beneficiary respondents were in the age group of 25-40 years while 55.42 per cent of beneficiary respondents and 73.33 per cent of non-beneficiary respondents were in the age group, above 40 years.

The educational status of the respondents had been classified into 6 levels of standards from illiterate up to graduate level and above. In the field survey, no respondents were found to be illiterate in both the groups. From the findings it can be deduced that the respondents of the study area were fairly educated.

In the study area, there were no tenant cultivators. Further, all the respondent farmers were found to have subsidiary occupations in each of the size groups. In marginal and large size categories, 100 per cent respondents had subsidiary occupation against both the groups. At overall level, 94.58 per cent of the beneficiary respondents had the subsidiary occupations and the figure stood at 93.33 per cent for non-beneficiary respondents. The agricultural & allied activities such as poultry, fishery, piggery, broiler farm, *etc* and other economic activities such as vegetable vendors, carpenters, wage laborers, petty shops, *etc.* were included as subsidiary occupations of the respondents.

In the study area, male population dominated over female population of the respondent families. In case of beneficiary families, on an average, the male population stood at 52.17 per cent and the female population stood at 47.83 per cent.

For non-beneficiary families the male population recorded at 52.72 per cent and the female population recorded at 47.28 per cent of the total population. The overall family size stood at 6.05 persons for beneficiary families and 5.82 persons for non-beneficiary families. On an average the family size was neither very big nor too small.

The educational status of the farm families was studied, excluding the children below 6 years. On an average, the population of children below 6 years stood at 8.95 per cent for beneficiary and 7.45 per cent for non-beneficiary group. On an average, the percentage of illiterate persons was found to be 8.54 per cent and 6.19 per cent for beneficiary and non-beneficiary farm families, respectively. The standard of education level of the farm families was recorded from class I-V standard to the post graduate and technical education level. It has been observed that all the farm families had shown their interest to educate their family members to the possible extent.

The total owned land includes homestead, orchard and field cropped area. The average size of owned land holding stood at 1.49 hectares for beneficiary and 1.60 hectares for non-beneficiary household. The overall per household net operated area (including are under leased in/mortgaged in) was 1.45 hectares and 1.60 hectares for beneficiary and non-beneficiary household, respectively. Of the net operated area, on an average, the net irrigated area was of 13.70 per cent for beneficiary farmers and 14.02 per cent for non-beneficiary farmers.

The crop season of Assam is divided into two main seasons- *Kharif* from April to September and *Rabi* from October to March. These two seasons follow different type of cropping pattern.

Accordingly, the cropping pattern of the sample beneficiary and non-beneficiary farmers across the different farm size groups were worked out in terms of area under different crops under *kharif* and *rabi* season separately.

The worked out cropping intensity was found higher amongst the beneficiary farmers in all the size groups as compared to non-beneficiary farmers. One of the reasons might be the effect of the KCC scheme in operation. The overall cropping intensity stood at 145.44 per cent for beneficiary and 142.12 per cent for non-beneficiary farmers. Cropping intensity indicates aggregate production level of the crops grown in the state and in the present context, the analysis reveals a moderate picture.

In the analysis of cropping pattern, both the groups showed a similar picture with a little bit of variation between them.

In *kharif* season, 4 crops were cultivated by the sample farmers *viz.*, *kharif* paddy, vegetables, jute and sugarcane. *Kharif* paddy dominated over all other crops grown in the season for both the groups.

In *rabi* season, 4 crops *viz.*, paddy (summer paddy), pulses, vegetables and oilseeds were grown by the sample beneficiaries and here also, paddy occupied a larger area as compared to the other crops.

In the study area, all the sample farmers cultivated both HYV paddy and Local paddy during *kharif* season. But the area under local paddy was at much lower level than that of the local paddy. It might have happened on account of yield difference between HYV and local paddy. In other crops, all the sample farmers used certified seeds. For summer paddy, all the farmers used HYV seeds.

The beneficiary farmers were observed to reap higher yield rate as compared to non-beneficiary farmers. But no significant differences were there in productivity of the crops under study. However, the impact of credit as a whole upon the beneficiary farmers cannot be denied. In *kharif* season, the overall differences in yield of crops of beneficiary over non-beneficiary farmers in terms of percentage were found to increase by 6.62 per cent in HYV paddy, 1.87 per cent in local paddy, 7.76 per cent in total paddy, 1.47 per cent in vegetables, 2.61 per cent in jute and 6.25 per cent in sugarcane. In case of *rabi* crops, the yield rate of beneficiary farmers was observed to be increased over the non-beneficiary farmers had been found increase by 6.23 per cent in summer paddy, 6.47 per cent in pulses, 4.04 per cent in vegetables and 4.28 per cent in oilseeds (mustard).

The gross return in terms of value of the crops and its by-product in respect of the sample beneficiary and non-beneficiary farmers were worked out during the course of the study. Here, prices of the crops refer to the price received by the farmers at their farm gate. The price of a crop was computed by taking the average of prevalent prices of the crop in different sample districts. Combining *kharif* and *rabi* season, for beneficiary farmers, the aggregate per hectare gross return stood at of Rs.54,455.50 for marginal group, Rs.57,895.72 for small group, Rs.54,266.57 for medium group and Rs.52,143.26 for large group with an overall per hectare gross return of Rs.55,846.44.

In case of non-beneficiary farmers, the aggregate per hectare gross return was Rs.51,944.60 for marginal group, Rs.54,120.58 for small group, Rs.51839.21 for medium group and Rs.49,148.70 for large group with an overall per hectare gross

return of Rs.52,350.43. Thus, the gross return of the total crop output for the beneficiary farmers was recorded to be higher by Rs.3,496.01 per hectare as compared to the non-beneficiary farmers.

Season-wise percentage share of gross return from all the crops to the aggregate return from all crop output were worked out in the reference year. The gross return during *kharif* season for beneficiary farmers varied between 65.80 and 71.29 per cent with an average of 68.06 per cent of the aggregate gross return from all the crops across the different farm size groups. In case of non beneficiary farmers, it varied between 67.75 and 70.55 per cent with an average of 68.51 per cent of the aggregate gross return from all the crops across the farm size groups. The share of gross return during *kharif* season was significantly higher than that of the *rabi* season.

The estimated annualized capital cost incurred by beneficiary households were found at Rs.724.56, Rs 646.75, Rs 1,268.42, Rs.3,120.18 per hectare against the marginal, small, medium and large group of farmers, respectively with an overall average of Rs.1,000.64 per hectare and for non-beneficiary farmers, it stood at Rs.715.23 for marginal, Rs.473.68 for small, Rs.1,250.47 for medium and Rs.2,598.10 for large farmers with an overall average of Rs.1,095.05 per hectare. This is indicative of the status of mechanization in the study area, which however cannot be considered as satisfactory.

In addition to agricultural income, all the farmers had incomes from subsidiary occupations as well. The share of agricultural income was 62.87 per cent and that of subsidiary occupation was 37.13 per cent of the total gross income against small size category (Rs. 2,14,46,285.46) for the beneficiary farmers. Of the total gross income of medium size group of beneficiary farmers (Rs.1,12,09,803.61.), the share of agricultural income was 79.29 per cent and the share of subsidiary occupation was 20.71 per cent. As against this, of the total gross income of large size group of beneficiary farmers (Rs.17,59,405.29), the share of agricultural income was 86.54 per cent and the share of subsidiary occupation was 13.46 per cent. The overall share of income from agriculture alone stood at 64.96 per cent and income from subsidiary occupation stood at 35.04 per cent of the total gross income.

For non-beneficiary farmers, of the total gross income (Rs.18,69,451.87) in case of marginal farmers, the share of agricultural income was 49.97 per cent and that of subsidiary occupation was 50.03 per cent. Of the total gross income of small farmers (Rs.57,34,616.15), the share of agricultural income was 58.64 per cent and

the share of subsidiary occupation was 41.36 per cent. Of the total gross income (Rs.18,21,040.87) of medium group of farmers, the share of agricultural income was 82.06 per cent and the share of subsidiary occupation was 17.94 per cent. Of the total gross income (Rs.16,10,043.20) of large group of farmers, the share of agricultural income was 83.85 per cent and the share of subsidiary occupation was 16.15 per cent. The overall share of income from agriculture stood at 64.71 per cent and income from subsidiary occupation stood at 35.29 per cent of the total gross income.

Thus, the subsidiary occupations played an important role in generating additional income in the entire study area. Further, a definite trend was observed across the different size group of farmers for both beneficiary and non-beneficiary households. The gross income from agriculture was found to increase with farm sizes while that from subsidiary occupation showed a declining trend with farm sizes for both beneficiary and non-beneficiary households.

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Chapter IV
Impact of credit on agricultural production
(Based on secondary and primary level data)

Prior to the introduction of KCC scheme, the agricultural credit was given in terms of crop loan. Now the crop loans are given under the KCC scheme.

Table-4.1 visualizes credit flow to agriculture and allied activities under annual credit plan in Assam. The advance under agriculture & allied activities increased from Rs.100.81 crore in 2003-04 to Rs.2002.47 in 2011-12 but in the succeeding year it decreased to Rs. 1851.01 crore with a negative growth of 7.56 per

Table-4.1
Credit flow to Agriculture and allied activities under annual credit plan in Assam

Year	Advance Agriculture & Allied Activities (Rs. in Crore)	Crop Loan (Rs. in Crore)	Percentage share of crop loan to total Agricultural Advance	Per Capita Crop Loan (In Rupees)	Crop loan per farm family
2003-04	100.81	43.82	43	16.44	161
2004-05	243.76	79.46	33	20.81	293
2005-06	331.89	84.31	25	31.63	311
2006-07	468.91	79.44	17	29.80	293
2007-08	566.71	121.61	21	45.62	448
2008-09	523.38	203.12	39	76.20	749
2009-10	814.69	359.39	44	134.82	1307
2010-11	876.76	373.63	43	139.94	1359
2011-12	2,002.47	1,082.03	54	346.86	3935
2012-13	1,851.01	908.28	49	292.05	3303
Growth (2012-13) over 2011-12	(-) 7.56	(-) 16.06	-	(-) 15.79	(-) 16.1
ACGR	15.44	19.23	3.33	19.24	19.12

Note: Total Farmer Family =27.20 Lakh as per Agricultural Census, 2000-01
Total Farmer Family =27.50 Lakh as per Agricultural Census, 2005-06
Source: Reports of State Level Banker's Committee, Assam, Economic Survey, Assam, 2013-14

cent over 2011-12. But the ACGR grew at the rate of 15.44 per cent during the reference period. In case of crop loan, the amount of loan increased from Rs.43.82 crore in 2003-04 to Rs. 1082 crore in 2011-12 and in the succeeding year it came down to Rs. 908.28 crore with a negative growth of 16.06 per cent over 2011-12. The ACGR of crop loan grew at the rate of 19.23 per cent. However, per capita and per family crop loan did not show any significant rise during the reference period. The decreasing trend of credit advance in the last year over the previous year might be due to shortfall in repayment for which the financial institutes were reluctant to disburse the eligible amounts to the loan seekers.

Table - 4.2 reflects the outstanding advances against agricultural & allied sectors in Assam. The advances to agriculture & allied sector during the period increased from 9.48 per cent in 2004-05 to 20.15 per cent in 2012-13 registering an ACGR of 9.87 per cent.

Table-4.2
Advances under Agriculture & allied Sector in Assam

Rupees in crore

Year	Aggregate advances	Agriculture & Allied Sector	Percentage of Agriculture & Allied Sector to Aggregate advances
2004-05	6,497.50	616.15	9.48
2005-06	9,811.15	1,212.84	12.36
2006-07	12,989.44	1,596.74	12.29
2007-08	16,081.43	2,158.80	13.42
2008-09	17,750.99	2,345.86	13.22
2009-10	20,910.97	3,868.37	18.50
2010-11	23,843.62	4,557.40	19.11
2011-12	30,363.22	5,733.91	19.91
2012-13	32,825.11	6,614.39	20.15
ACGR	20.82	32.39	9.87

Source: Economic Survey, Assam, 2013-14

Table -4.3 reveals the annual achievement against the number of card issued and amount disbursed during 2003-04 to 2013-14 in Assam. The number of card issued increased from 94377 in 2003-04 to 3,08,306 in 2013-14 with an ACGR of

Table-4.3
Advance under Kishan Credit Card Scheme

Year	Annual achievement		Cumulative achievement	
	Card Issued (No,)	Amount (Rs .in Lakh)	Card Issued (No.)	Amount (Rs .in Lakh)
2003-04	94,377	9,728.60	-	-
2004-05	86,822	9,382.86	1,72,965	22,202.28
2005-06	70,238	9,677.79	3,39,750	38,839.94
2006-07	50,067	7,862.03	3,59,395	40,580.52
2007-08	62,132	16,365.83	3,29,932	67,908.97
2008-09	1,03,361	37,589.23	4,80,393	1,04,682.06
2009-10	1,49,822	43,055.94	6,30,070	1,58,372.04
2010-11	1,63,063	50,495.87	7,93,801	2,09,071.23
2011-12	3,71,474	1,30,329.35	9,67,220	3,07,834.01
2012-13	2,65,797	93,219.58	13,29,203	3,93,538.41
2013-14	3,08,306	1,50,567.42	15,86,687	15,51,091.21
ACGR	18.46	37.92		

Source::Reports of State Level Banker's Committee, Assam

18.46 per cent while the amount of advance increased from Rs.9,728.6 lakh to Rs.1,50,567.42 lakh during the reference period with an ACGR of 37.92 per cent. The cumulative achievement of Kishan Credit Card issued, stood at 1,586,687 for an amount of Rs. 1,551,091.21 lakh at the end of 2013-14.

The area covered by each KCC was 29.27 hectares in terms of net cropped area and 41.93 hectares in terms of gross cropped area in 2003-04 which reduced to 7.57 hectares and 11.04 hectares against the net and the gross cropped area, respectively during 2011-12 (Table-4.4). The estimated amount of advance against each card showed an increasing trend from Rs. 10,308.00 in 2003-04 to Rs.35,084 in

Table-4.4
Estimated Area Covered by each KCC in terms of net cropped and gross cropped area in Assam

Year	No. of KCC Issued	Net Cropped Area (In hectare)	Area Covered by Each KCC (In terms of Net Cropped Area) (In hectare)	Gross Cropped Area (In Hectare)	Area Covered by Each KCC (In terms of Gross Cropped Area) (In hectare)	Estimated advance in each KCC (In Rs.)	Per hectare Estimated advance in each KCC (In Rs.)
2003-04	94377	2752601	29.17	3956842	41.93	10308	353
2004-05	86822	2752979	31.71	3896357	44.88	10807	341
2005-06	70238	2752979	39.20	3949040	56.22	13779	352
2006-07	50067	2752979	54.99	3763284	75.16	15703	286
2007-08	62132	2752979	44.31	3838732	61.78	26340	594
2008-09	103361	2810443	27.19	3998734	38.69	36367	1338
2009-10	149822	2810597	18.76	4099462	27.36	28738	1532
2010-11	163063	2810597	17.24	4159977	25.51	30967	1796
2011-12	371474	2810597	7.57	4099462	11.04	35084	4635

Source: Reports of State Level Banker's Committee, Assam

2011-12. The per hectare estimated advance of each KCC was very low as compared to the per hectare cost of cultivation (Appendix I) of any field crops in the state. But it showed an increasing trend *i.e.,* from Rs.353/ha. to Rs. 4,653/ha during the reference period. The crop specific policy under the KCC scheme launched during 2011-12 can be a panacea for credit inadequacy of capital-starved farmers of the state.

In order to assess the impact of crop loan, the secondary level time series data on food-grains production and the amount crop loan utilized in Assam are depicted in Table-4.5 It can be seen that there exists a positive relationship between the food grain production and amount of crop loan *i.e.*, the production varied directly with the amount of loan. A statistic was further worked out to measure the share of loan per quintal of production of food-grains. Accordingly, the estimated amount of loan per quintal of food-grains was Rs. 21.97 in 2004-05 which increased to Rs.270.27 in 2013-14. It might be due to the application of the required inputs in the crop field by the farmers availing crop loan.

A simple linear regression model was also tried in order to draw a statistical interpretation taking production of food-grains (Y) as the dependent variable and the crop loan as the independent variable (X).

Table – 4.5
Estimated Amount of crop Loan per Quintal of Production of Food-grains in Assam

Years	Production of Food –Grains (in Lakh Qtl)	Crop Loan (in Lakh Rs.)	Estimated Amount of involvement of Loan per Quintal of Production of Food-grains (in Rs./ Qtl.)
2004-05	361.70	7,946	21.97
2005-06	368.00	8,431	22.91
2006-07	306.00	7,944	25.96
2007-08	346.80	12,161	35.07
2008-09	414.20	20,312	49.04
2009-10	455.70	35,939	78.87
2010-11	517.80	37,363	72.16
2011-12	485.70	108,203	222.78
2012-13	527.90	90,828	172.06
2013-14	540.20	146,002	270.27

Source: Economic Survey, Assam 2014-2015, Directorate of Economics & Statistics.

Table-4.6
Result of the regression model for food-grain production and crop loan in Assam

Observation	Result	P-value
R^2	0.66	-
Adjusted R^2	0.62	-
Constant (coefficient)	36.66	0.0000003*
Credit (coefficient of dependent variable, X)	0.00014	0.00442*
F	15.701*	

Note: '*' indicates level of significance at 5% probability level.

From the Table-4.6, it was seen that the constant and the dependent variable, crop loan had a significant effect on the food-grain production of the state. In this analysis, some other variables could not be brought under the purview of observation on account of data gap.

Table-4.7 shows the trend of percentage share of crop loan to the agricultural GSDP of the state during 2004-05 to 2013-14. The share of crop loan to the agricultural GSDP of the state registered an increase from 0.69 per cent in 2004-05 to 9.87 per cent in 2013-14 .It was seen that the agricultural GSDP is increasing along with the increase in crop loans during the period under reference.

Table -4.7
Percentage Share of Crop Loan to the Agricultural GSDP at Constant Prices 2004-05 in Assam

Years	Agricultural GSDP at Constant prices 2004-05 (Rs. in lakh)	Crop Loan (in Lakh Rs.)	Share of crop loan to Agricultural GSDP at Constant prices 2004-05
2004-05	11,58,871	7,946	0.69
2005-06	11,81,144	8,431	0.71
2006-07	12,00,941	7,944	0.66
2007-08	12,37,322	12,161	0.98
2008-09	12,52,426	20,312	1.62
2009-10	13,33,637	35,939	2.69
2010-11	13,77,576	37,363	2.71
2011-12	13,93,846	1,08,203	7.76
2012-13(P)	14,18,045	90,828	6.41
2013-14(Q)	14,79,852	1,46,002	9.87

Source: Economic Survey, Assam 2014-2015, Directorate of Economic & Statistics

To draw a statistical inference, a simple linear regression model was tried on the data taking the agricultural GSDP of the state as dependent variable (Y) and the crop loan as independent variable(X), the results are shown in table-4.8.

Table-4.8
Result of the regression model on Agricultural GSDP and Crop loan

Observation	Result	P-value
R^2	0.82	-
Adjusted R^2	0.79	-
Constant (coefficient)	12,06,807.454	0.00
Credit (coefficient of dependent variable, X)	2.03226	0.0003
F	35.32*	

Note: '*' indicates level of significance at 5% probability level.

From the Table-4.8, it is seen that the constant and the dependent variable, crop loan had a significant effect on the agricultural GSDP of the state.

Table-4.9
Comparative analysis of Yield rate of the Crops Per Hectare between Beneficiary and Non- Beneficiary Sample Households

Crops	Yield Rate (Qtl./ha.)		Increase(+)/decrease(-) of yield of beneficiary over non-beneficiary(%)
	Beneficiary	Non-Beneficiary	
Crop (*Kharif* Season)			
Paddy(HYV)	47.16	44.23	6.62
Local Paddy	24.05	23.61	1.87
Total Paddy	44.08	40.91	7.76
Vegetables	30.86	30.41	1.47
Jute	17.02	16.59	2.61
Sugarcane (in Molasses form)	15.48	14.57	6.25
Crop (*Rabi* Season)			
Paddy (HYV)	49.59	46.68	6.23
Pulse	6.16	5.78	6.47
Vegetables	37.31	35.86	4.04
Oilseeds (Mustard)	6.14	5.89	4.28

Source: Primary Data

In order to see the impact of the KCC scheme, some of the important primary data were analyzed further for a comparative analysis of the yield rate of the crops grown in the study area (Table- 4.9).

Gross estimated return per hectare, annualised value per hectare on capital goods and cropping intensity (Table- 4.10) were also worked out for beneficiary and non- beneficiary sample households for realistic assessment.

Table-4.10
Gross income, annualized value on capital farm assets and cropping Intensity between the Beneficiary and Non- Beneficiary Sample Households

Crops Season	Beneficiary	Non-Beneficiary	Increase(+)/decrease(-) of yield of beneficiary over non-beneficiary(%)
Kharif Season (in Rs.)	54,518.73	50,622.23	7.70
Rabi Season (in Rs.)	51,308.70	48,679.76	5.40
Combining Kharif + Rabi including by-product (in Rs.)	53,510.13	50,034.68	6.95
Subsidiary Income/hh (in Rs.)	63,414.96	64,900.00	-2.29
Gross income/HH (Agril. + Subsidiary) (in Rs.)	1,76,065.15	1,78,654.33	-1.45
Estimated annualised value/ha. on Capital Farm Assets (in Rs.)	1,000.64	1,095.05	-8.62
Cropping Intensity (in percentage)	145.44	142.12	2.34

Source: Primary Data

All the beneficiary farmers obtained higher yield rate of the crops in both the seasons as compared to the non-beneficiary farmers (Table-4.9) and so was seen in respect of gross return from produce in terms of rupee per hectare (Table-4.10). However, in case of subsidiary income per household, the beneficiary farmers registered a decline of 2.29 per cent over the non-beneficiary farmers. The estimated annualised value per hectare on capital farm assets was also found in the higher side by 8.62 per cent in case of non-beneficiary farmers. It might be due to more number of power tillers possessed by the non- beneficiary farmers. The beneficiary farmers recorded a cropping intensity of 148.44 against 142.12 per cent in case of non-beneficiary farmers. The analysis of data clearly established positive impact of the KCC scheme on crop production as a whole.

Table- 4.11 shows the farm size–wise per hectare cost, gross return and the BCR of the *kharif* crops cultivated by the sample households. [The cost of cultivation tables are given in Appendices (A1-A8)]

In *kharif* paddy, the cost of cultivation per hectare varied between Rs.30, 882.93 and Rs.32,861.91 across the farm size groups with an overall cost of Rs 32,097.18 in case of beneficiary farmers while in case of non-beneficiary farmers, it varied between Rs.30,034.43 and Rs.31,889.70 with an overall cost of Rs 31,473.12.

The cost of cultivation of *kharif* vegetables was recorded to be the highest (Rs.28,709.97 per hectare) against the large size group and the lowest (Rs. 25,875.07 per hectare) against the marginal size group with an overall average amount of Rs 27,273.44 for beneficiary farmers. In case of non-beneficiary farmers, the highest cost of cultivation (Rs.28, 266.43 per hectare) was found against the large group and the lowest (Rs.25.583.61 per hectare) was recorded in the marginal farm size group.

In Jute, the cost of cultivation per hectare varied between Rs.21,051.85 and Rs.24,239.35 with an overall average of Rs.22,202.09 per hectare for beneficiary farmers. In case of non-beneficiary farmers, it varied between Rs. 21,269.73 and Rs. 23, 717.57 across the farm size groups with an overall average of Rs. 22, 146.51 per hectare.

In sugarcane, the cost of cultivation for beneficiary farmers, was found highest (Rs.35393.60 per hectare) against the large farm size and the lowest (Rs.33,340.03 per hectare) against medium size group with an overall average of Rs.33,590.43 per hectare while for non-beneficiary farmers, the highest cost of cultivation was recorded at Rs.34,987.13 per hectare in large farm size group and the lowest (Rs.33,678.00 per hectare) was recorded in small size group with an overall average of Rs.34,142.89 per hectare.

The highest BCR of 1.84:1 was found in *kharif* paddy against the marginal size group followed by 1.82:1 for small, 1.73:1 for large and 1.66:1 for medium size group in respect of beneficiary farmers with an overall BCR of 1.77:1. In case of non-beneficiary farmers, the highest BCR of 1.71:1 was recorded against the marginal size group followed by 1.70:1 for small, 1.63:1 for medium and 1.60:1 for large size group with an overall BCR of 1.67:1.

Table - 4.11

Farm size-wise Per Hectare Cost, Gross Return and BCR of the *Kharif* Crops cultivated by the Sample Households

Particulars		Marginal		Small		Medium		Large		Overall	
		B	NB	B	NB	B	NB	B	NB	B	NB
Crop	**Paddy (Combining HYV & Local)**										
Cost Per Hectare	**(in Rs.)**	30,882.93	30,034.43	32,108.79	31,737.46	32,861.91	31,889.70	31,144.74	31,403.44	32,097.18	31,473.12
Gross Return Per Hectare	**(in Rs.)**	56,926.37	51,488.47	58,392.56	53,800.83	54,565.55	52,061.85	53,748.57	50,318.34	56,666.74	52,416.81
BCR		1.84	1.71	1.82	1.70	1.66	1.63	1.73	1.60	1.77	1.67
Crop	**Vegetables**										
Cost Per Hectare	**(in Rs.)**	25,875.07	25,583.61	27,220.26	27,099.80	27,868.07	27,986.03	28,709.97	28,266.43	27,273.44	27,356.25
Gross Return Per Hectare	**(in Rs.)**	46,245.00	45,570.00	46,875.00	46,335.00	45,525.00	45,315.00	44,670.00	44,325.00	46,287.33	45,617.29
BCR		1.79	1.78	1.72	1.71	1.63	1.62	1.56	1.57	1.70	1.67
Crop	**Jute**										
Cost Per Hectare	**(in Rs.)**	21,288.95	21,269.73	21,051.85	21,369.40	23,625.69	23,717.57	24,239.35	23,700.99	22,202.09	22,146.51
Gross Return Per Hectare	**(in Rs.)**	37,324.00	35,647.00	37,711.00	36,227.50	35,410.50	35,475.00	34,271.00	34,099.00	36,603.63	35,673.14
BCR		1.75	1.68	1.79	1.70	1.50	1.50	1.41	1.44	1.65	1.61
Crop	**Sugercane**										
Cost Per Hectare	**(in Rs.)**	34,787.22	34,515.49	33,416.66	33,678.00	33,340.03	34,140.07	35,393.60	34,987.13	33,590.43	34,142.89
Gross Return Per Hectare	**(in Rs.)**	44,209.33	42,395.61	48,743.62	47,610.05	43,529.18	43,075.76	42,168.90	41,942.18	46,984.53	44,846.91
BCR		1.27	1.23	1.46	1.41	1.31	1.26	1.19	1.20	1.40	1.31

Source: Primary data

Note: B= beneficiary NB=Non-beneficiary

The highest BCR of 1.79:1 was found in *kharif* vegetables against the marginal size group followed by 1.72:1 for small, 1.63:1 for medium and 1.56:1 for large size group in respect of beneficiary farmers with an overall BCR of 1.70:1. In case of non-beneficiary famers, the highest BCR of 1.78:1 was recorded against the marginal size group followed by 1.71:1 for small, 1.62:1 for medium and 1.57:1 for large size group with an overall BCR of 1.67:1.

For jute crop, the highest BCR of 1.79:1 was found against the small size group followed by 1.75:1 for marginal, 1.50:1 for medium and 1.41:1 for large size group in respect of beneficiary farmers with an overall BCR of 1.65:1. In case of non-beneficiary farmers, the highest BCR of 1.70:1 was found against the small size group followed by 1.68:1 for marginal size group, 1.50:1 for medium and 1.44:1 for large size group with an overall BCR of 1.61:1.

The highest BCR of 1.46:1 was recorded in sugarcane against the small size group followed by 1.31:1 for medium and 1.27:1 for marginal and 1.19:1 for large size group in respect of beneficiary farmers with an overall BCR of 1.40:1. In case of non-beneficiary farmers, the highest BCR of 1.41:1 was found against the small size group followed by 1.26:1 for medium size group, 1.23:1 for marginal and 1.20:1 for large size group with an overall BCR of 1.31:1.

Table- 4.12 shows a comparative scenario of an assessment of the farm size – wise per hectare cost, gross return and the BCR of the *rabi* crops cultivated by the sample households.

In *rabi* paddy, the highest cost of cultivation (Rs.35,531.84 per hectare) was recorded against the large farm size group followed by small (Rs.34,404.78), medium (Rs.34,219.28) and marginal (Rs.33,850.19) size group with an overall average of Rs. 34,306.12 per hectare for beneficiary farmers. In case of non-beneficiary farmers, the highest cost of cultivation was observed in large farmers (Rs.35,105.13) followed by medium (Rs.34,066.90), small (Rs.33,944.74), and marginal (Rs.33,358.66) size group with an average of Rs. 34,117.01 per hectare.

In *rabi* pulses, the cost of cultivation was recorded to be the highest (Rs.18, 972.31 per hectare) against the marginal size group and the lowest (Rs. 17, 882.00) against the medium size group with an overall average of Rs 18,527.80 per hectare for beneficiary farmers. In case of non-beneficiary farmers, the highest cost of cultivation (Rs.18,984.51) per hectare was seen in marginal and the lowest (Rs.17,544.13) per hectare in the large farm size group with an overall average of Rs.18,183.01 per hectare.

In *rabi* vegetables, the cost of cultivation varied between Rs.30, 467.07 and Rs.33, 486.77 with an overall average of Rs.32, 097.01 per hectare for beneficiary farmers. In case of non-beneficiary farmers, it varied between Rs. 30,259.61 and Rs.33, 043.23 across the farm size groups with an overall average of Rs.32, 140.39 per hectare.

In oilseed (mustard) the highest the cost of cultivation (Rs.11, 959.17) was recorded against the large farm size and the lowest (Rs.10, 232.81) against marginal size group with an overall average of Rs.10, 798.45 per hectare in case of beneficiary farmers. For non-beneficiary farmers, the highest cost of cultivation was recorded to be Rs.11,582.46 per hectare in large farm size group and the lowest amount (Rs.10,136.47) per hectare in marginal size group with an overall average of Rs.10,869.16 per hectare.

The highest BCR of 1.77:1 was found in summer paddy against the small size group followed by 1.75:1 for marginal, 1.71:1 for medium and 1.55:1 against the large size group in respect of beneficiary farmers with an overall BCR of 1.73:1. In case of non-beneficiary farmers, the highest BCR of 1.70:1 was recorded against the small size group followed by 1.69:1 for marginal size group, 1.62:1 for marginal and 1.47:1 for large size group with an overall BCR of 1.64:1.

In *rabi* pulses, the highest BCR of 1.51:1 was found in the small size group followed by 1.50:1 against the medium, 1.47:1 for marginal and 1.41:1 for large size group in respect of beneficiary farmers with an overall BCR of 1.50:1. In case of non-beneficiary farmers, the highest BCR of 1.50:1 was recorded in pulses against the small size group followed by 1.42:1 for large size group, 1.39:1 for marginal and 1.38: 1 for medium size group with an overall BCR of 1.43:1.

The highest BCR of 1.54:1 was found in *rabi* vegetables against the marginal size group followed by 1.49:1 for small, 1.41:1 for medium and 1.28:1 for large size group in respect of beneficiary farmers with an overall BCR of 1.45:1. In case of non-beneficiary farmers, the highest BCR of 1.47:1 was found against the marginal size group followed by 1.45:1 for small size group, 1.36:1 for medium and 1.28:1 for large size group with an overall BCR of 1.39:1.

In oilseeds, the highest BCR of 1.80:1 was recorded against the marginal size group followed by 1.78:1 for small, 1.63:1 for medium and 1.47:1 for the large size group in respect of beneficiary farmers with an overall BCR of 1.71:1. In case of non-beneficiary farmers, the highest BCR of 1.79:1 was found against the marginal size group followed by 1.72:1 for small size group, 1.54:1 for medium and 1.49:1 for large size group with an overall BCR of 1.63:1.

Table – 4.12

Farm size-wise Per Hectare Cost, Gross Return and BCR of the Rabi Crops cultivated by the Sample Households

Particulars		Marginal		Small		Medium		Large		Overall	
		B	NB	B	NB	B	NB	B	NB	B	NB
Crop	Paddy										
Cost Per Hectare	(in Rs.)	33,850.19	33,358.66	34,404.78	33,994.74	34,219.28	34,066.90	35,531.84	35,105.13	34,306.12	34,117.01
Gross Return Per Hectare	(in Rs.)	59,400.00	56,220.00	60,912.00	57,900.00	58,380.00	55,320.00	55,020.00	51,756.00	59,507.10	56,016.89
BCR		**1.75**	**1.69**	**1.77**	**1.70**	**1.71**	**1.62**	**1.55**	**1.47**	**1.73**	**1.64**
Crop	Pulses										
Cost Per Hectare	(in Rs.)	18,972.31	18,984.51	18,748.94	17,967.73	17,882.00	18,790.03	17,969.57	17,544.13	18,527.80	18,183.01
Gross Return Per Hectare	(in Rs.)	27,855.00	26,325.00	28,350.00	26,910.00	26,910.00	25,920.00	25,425.00	24,975.00	27,705.22	26,020.53
BCR		**1.47**	**1.39**	**1.51**	**1.50**	**1.50**	**1.38**	**1.41**	**1.42**	**1.50**	**1.43**
Crop	Vegetables										
Cost Per Hectare	(in Rs.)	30,467.07	30,259.61	31,983.62	31,863.16	32,594.47	32,695.63	33,486.77	33,043.23	32,097.01	32,140.39
Gross Return Per Hectare	(in Rs.)	47,062.50	44,537.50	47,675.00	46,150.00	45,887.50	44,437.50	42,862.50	42,412.50	46,638.31	44,825.76
BCR		**1.54**	**1.47**	**1.49**	**1.45**	**1.41**	**1.36**	**1.28**	**1.28**	**1.45**	**1.39**
Crop	Oilseed/Mustard										
Cost Per Hectare	(in Rs.)	10,232.81	10,136.47	10,494.18	10,356.58	11,159.25	11,446.90	11,959.17	11,582.46	10,798.45	10,869.16
Gross Return Per Hectare	(in Rs.)	18,450.00	18,150.00	18,690.00	17,850.00	18,240.00	17,640.00	17,610.00	17,220.00	18,423.66	17,667.26
BCR		**1.80**	**1.79**	**1.78**	**1.72**	**1.63**	**1.54**	**1.47**	**1.49**	**1.71**	**1.63**

Source: Primary data
Note: B= beneficiary NB=Non-beneficiary

Table – 4.13
Season-wise Per Hectare Cost, Gross Return and BCR of all the Crops cultivated by the Sample Households

Particulars		Marginal		Small		Medium		Large		Overall	
		B	**NB**	**B**	**NB**	**B**	**NB**	**B**	**NB**	**B**	**NB**
Kharif season(April to September)											
Cost Per Hectare	(in Rs.)	30,286.95	29,610.82	31,638.41	31,091.67	32,372.16	31,505.01	30,789.31	31,072.14	31,603.75	30,976.90
Gross Return Per Hectare	(in Rs.)	55,492.41	50,636.54	57,126.36	52,614.60	53,438.72	51,161.29	52,441.95	49,484.99	55,424.70	51,416.54
BCR		**1.83**	**1.71**	**1.81**	**1.69**	**1.65**	**1.62**	**1.70**	**1.59**	**1.75**	**1.66**
Rabi season (October to March)Pulses											
Cost Per Hectare	(in Rs.)	30,381.82	30,128.31	30,550.39	30,633.55	31,198.95	30,879.58	30,207.20	29,776.90	30,727.95	30,451.50
Gross Return Per Hectare	(in Rs.)	52,056.31	49,598.09	52,368.03	50,602.26	51,437.89	48,101.38	44,680.28	42,717.24	51,574.26	48,353.41
BCR		**1.71**	**1.65**	**1.71**	**1.65**	**1.65**	**1.56**	**1.48**	**1.43**	**1.68**	**1.59**
Combining both the seasons *Kharif* & *Rabi* (April to March)											
Cost Per Hectare	(in Rs.)	30,315.45	29,764.47	31,303.37	30,954.10	31,982.91	31,308.75	30,612.86	30,684.51	31,328.57	30,817.97
Gross Return Per Hectare	(in Rs.)	54,460.22	50,328.21	55,661.08	52,010.30	52,774.88	50,201.06	50,089.26	47,459.58	54,214.87	50,489.93
BCR		**1.80**	**1.69**	**1.78**	**1.68**	**1.65**	**1.60**	**1.64**	**1.55**	**1.73**	**1.64**

Source: Primary data

Note: B= beneficiary NB=Non-Beneficiary

Table- 4.13 shows the season –wise per hectare cost, gross return and the BCR of all the crops as a whole cultivated by the sample households.

The highest BCR of 1.83:1 was found for all the crops of *kharif* season against the marginal size group followed by 1.81:1 for small, 1.70:1 for large and 1.65:1 for medium size group in respect of beneficiary farmers with an overall BCR of 1.75:1. In case of non-beneficiary farmers, the highest BCR of 1.71:1 was found against the marginal size group followed by 1.69:1 for small size group, 1.62:1 for medium and 1.59:1 for large size group with an overall BCR of 1.66:1. The highest BCR of 1.71:1 was recorded for all the crops of *rabi* season against the small and marginal size group followed by 1.65:1 for medium and 1.48:1 for large size group in respect of beneficiary farmers with an overall BCR of 1.68:1. In case of non-beneficiary farmers, the highest BCR of 1.65:1 was found in all crops of *rabi* season against the small and marginal size group followed by 1.56:1 for medium and 1.43:1 for large size group with an overall BCR of 1.59:1.

Combining all crops of *kharif* and *rabi* season, the overall BCR stood at 1.73:1 and 1.64:1 for beneficiary and non-beneficiary farmers, respectively. By and large, all the three tables had shown that the beneficiary farmers reaped higher benefits in terms of gross return per hectare over the non-beneficiary farmers. It might be the effect of the KCC possessed by the beneficiary farmers

The share of outstanding amount of loan under KCC in the gross income from agriculture and subsidiary income combined were worked out and are presented in Table-4.14. The situation was not found to be encouraging. The highest loan burden of 46.76 per cent of the gross income from agriculture was really a matter of concern especially for the marginal farmers. However, the share of outstanding loan decreased gradually from the small to the large farm size group of beneficiaries. It stood at 22.81 per cent against the small, 11.07 per cent against the medium and 5.12 per cent against the large farm size group with an overall average share of 21.83 per cent. When the agricultural income was combined with the subsidiary income, the share of outstanding dues came down significantly. Obviously, the subsidiary income was very important for repayment of the outstanding loans of the farmers. With the combined income, the share of outstanding dues came down to 22.41 per cent against the marginal, 14.34 per cent against the small, 8.77 per cent against the medium and 4.43 per cent against the large farm size group with an overall share of 14.18 per cent.

Table - 4.14
Share of outstanding amount of loan under KCC in Gross Income from Agri and Agril-subsidiary income Combined

Sl No.	Particulars	Marginal	Small	Medium	Large	Overall
1	No. of HH (in nos.)	78	116	43	3	240
2	Total Outstanding Amount of KCC Loan (in Rs.)	2,021,207.00	3,075,948.00	983,523.00	77,944.00	6,158,622.00
3	Gross Income from Agril. (in Rs.)	4,322,067.82	13,484,045.46	8,887,803.61	1,522,555.29	28,216,472.18
4	% Share of Involvement of the outstanding loan	46.76	22.81	11.07	5.12	21.83
5	Subsidiary Income (in Rs.)	4,698,500.00	7,962,240.00	2,322,000.00	236,850.00	15,219,590.00
6	Gross Income Combining Agril.& Subsidiary (3+5) (in Rs.)	9,020,567.82	21,446,285.46	11,209,803.61	1,759,405.29	43,436,062.18
7	% Share of Involvement of the outstanding loan	22.41	14.34	8.77	4.43	14.18

Source: Primary Data

Thus, it was seen that the higher size group of farmers were at better off position when considered in terms of outstanding amount of loan.

As per decision of the State Level Banker's Committee (SLBC), the scale of finance for *kharif* and *rabi* crops is prepared at state level by a committee under the Chairmanship of the Jt. Director, Directorate of Agriculture, Assam. The fixation of credit limit and repayment mode is prepared by a committee of the Government of India in consultation with the implementing banks. A loanee has to repay the loan within 12 months from the date of sanction of the loan. Repayment may be made for any amount by any number of instalments. If a loanee can repay the amount within the year, he can go for second loan as per guideline for the next year and on the basis of the repayment performance, a loanee can avail the loan up to five years at 10 per cent increase of the previous year loan. In the field survey, very few farmers were found to opt for second loan as they were not able to repay the earlier loan on time.

While making asset classification, the revised guidelines of the Kishan Credit Card (Apendix-1I), stipulated that an account could be treated as "standard", when the balance outstanding is less than or equal to drawing limit [short term (crop) loan] at any point of time during the preceding one year. In other words, it is suggested that the short term loan (with major component of crop loan) sanctioned on the KCC can be given the same treatment as a "cash credit" account for the purpose of applying prudential norms and should not be treated as "out of order" if the balance outstanding is less than or equal to the drawing limit and each drawl is repaid within a period of 12 months. Term loan under KCC has fixed repayment schedule and is to be governed by extant prudential norms.

Table-4.15
Repayment status of the beneficiary farmers in terms of asset classification

Sl. No.	Particulars	Marginal	Small	Medium	Large	Total
	No. of Respondent	78	116	43	3	240
1	Repayment status as "Standard"	10	21	9	0	40
2	In terms of percentage	12.82	18.10	20.93	0.00	16.67
3	Repayment status as "NPAs"	68	95	34	3	200
4	In terms of percentage	87.18	81.90	79.07	100.00	83.33

Source: Primary data

The Table 4.15 indicates the repayment status of the beneficiary farmers of the KCC scheme across the four different size group of farmers. The percentage of sample farmers found under the head "Standard" was 12.82 per cent for marginal, 18.10 per cent for small and 20.93 per cent for medium with an overall average figure of 16.67 per cent. A larger percentage of sample households were found to fall under the head of "NPAs". At overall level, it stood at 83.33 per cent. It might be due to lack of awareness, communication gap between the farmers and the financial institutes, or decline in net return of the crops from the expected level, or pre-assumption of waiving of loan or might be for diversion of the loan amount for non productive purpose to meet the day to day family requirement.

Table-4.16
Performance of the banks in terms of 'standard' repayment across the farm size groups.
(Observation based on 40 respondents with "standard" account)

Name of the Bank	Particulars	Marginal	Small	Medium	Large	Total
AGVB/LDRB	No. of Respondents	24	40	12	2	78
	No. of "Standard" Respondents	2	7	4	0	13
	% of 'Standard"	8.33	17.50	33.33	0.00	16.67
Co-op. Apex Bank	No. of Respondents	16	18	7	1	42
	No. of "Standard" Respondents	5	7	4	0	16
	% of 'Standard"	31.25	38.89	57.14	0.00	38.10
SBI	No. of Respondents	27	47	22	0	96
	No. of "Standard" Respondents	2	6	1	0	9
	% of 'Standard"	7.41	12.77	4.55	-	9.38
UBI	No. of Respondents	11	11	2	0	24
	No. of "Standard" Respondents	1	1	0	0	2
	% of 'Standard"	9.09	9.09	0.00	-	8.33
Total	No. of Respondents	78	116	43	3	240
	No. of "Standard" Respondents	10	21	9	0	40
	% of 'Standard"	12.82	18.10	20.93	0.00	16.67

Source: Primary data

Table-4.16 was prepared to see the performances of the banks from which the beneficiary lists were collected. There were 78 sample beneficiaries under AGVB/LDRB (Assam Gramin Vikash Bank/ Langpi Dehangi Rural Bank, Karbi Anglong) of which 24 belonged to marginal group, 40 belonged to small group, 12 belonged medium group and 2 belonged to large group. Nearly 33.33 per cent (highest) of the beneficiaries were found to be "Standard" beneficiary against the medium size group with an overall percentage of 16.67.

In case of the Coop Apex Bank Ltd, the highest number of "Standard" (57.14 per cent) beneficiary was found against the medium size group with an overall percentage of 38.10. In case of the SBI (State Bank of India), 12.77 per cent (highest) beneficiaries were to be found "Standard" against the small size groups with an overall average of 9.38 per cent. In case of the UBI (United Bank Of India), 9.09 per cent were found as "Standard" beneficiary for both marginal and small size groups with an overall average of 8.33 per cent. In totality, 16.67 per cent beneficiaries were found to be "Standard" as per the accepted norms. Thus, best performance in terms of repayment was found against the Coop Apex Bank Ltd followed by the AGVB, SBI and UBI. Thus, “NPA” has become a contentious issue for the banking institution these days.

The repayment statuses of credit under the KCC of the sample beneficiary households across the farm sizes and across the banks under study are presented in Table-4.17.

Of the total sample of 240, 78 (32%) beneficiaries belonged to AGVB/LDRB, 42 (18%) beneficiaries belonged to Coop. Apex Bank Ltd, 96 (40%) beneficiaries belonged to SBI and 24 (10%) beneficiaries belonged to UBI. The highest (119.31%) per cent of outstanding loan was found against the medium farm size group under the UBI followed by 107.83 per cent against the large size group under the AGVB/LDRB, 88.18 per cent against the SBI and 70.03 per cent against the marginal size group under the Coop. Apex Bank Ltd. The lowest outstanding loan of 38.39 per cent was found against the medium size group under the Coop. Apex Bank Ltd. followed by 68.10 per cent against the medium size group under the AGVB/LDRB, 88.18 per cent against the small size group under the SBI and 96.66 per cent against the marginal size group under the UBI. In total, the percentage of outstanding loan stood between 79.13 and 88.45 per cent with an overall average outstanding loan of 83.86 per cent across the farms and across the banks. At overall level, the best

performance towards recovery of loan was shown by the Coop. Apex Bank Ltd. with 57.83 per cent of the outstanding loan while the AGVB/LDRB occupied the second place with outstanding loan of 82.59 per cent followed by SBI (87.45 per cent) and the UBI (100.16 per cent).

Table- 4.17
Repayment Status of the sample beneficiary households across the farm sizes by banks under study in the state

Name of the Bank	Farm size ➡ Particulars ⬇	Marginal	Small	Medium	Large	Total
AGVB	No. HH.	24	40	12	2	78
	Amount of Loan	714,349	1,215,922	255,969	48,121	2,234,361
	Amount Repaid	98,831	212,241	81,660	4,920	397,652
	Outstanding Loan Amount	615,518	1,003,681	174,309	51,891	1,845,399
	Overall Remark (% of outstanding)	86.16	82.54	68.10	107.83	82.59
						.
Co-op. Apex Bank	No. HH.	16	18	7	1	42
	Amount of Loan	314,288	298,778	125,907	40,000	778,973
	Amount Repaid	94,195	142,754	77,576	16,146	330,671
	Outstanding Loan Amount	220,093	156,024	48,331	26,053	450,501
	Overall Remark (% of outstanding)	70.03	52.22	38.39	65.13	57.83
SBI	No. HH.	27	47	22	0	96
	Amount of Loan	1,077,775	1,837,368	817,024	-	3,732,167
	Amount Repaid	142,586	217,230	108,636	-	468,452
	Outstanding Loan Amount	935,189	1620138	708,388	-	3,263,715
	Overall Remark (% of outstanding)	86.77	88.18	86.70	-	87.45
UBI	No. HH.	11	11	2	0	24
	Amount of Loan	259050	295,000	44,000	-	598,050
	Amount Repaid	8,643	24,389	4,000	-	37,032
	Outstanding Loan Amount	250407	296,105	52,495	-	599,007
	Overall Remark (% of outstanding)	96.66	100.37	119.31	-	100.16
Total	No. HH.	78	116	43	3	240
	Amount of Loan	2,365,462	3,647,068	1,242,900	88,121	7,343,551
	Amount Repaid	344,255	596,614	271,872	21,066	1,233,807
	Outstanding Loan Amount	2,021,207	3,075,948	983,523	77,944	6,158,622
	Overall Remark (% of outstanding)	85.45	84.34	79.13	88.45	83.86

Source: Primary and Secondary data

The Coop. Apex Bank Ltd., sanctioned KCC loan through the GPSS (Gaon Panchayat Samabai Samittee). The GPSS are local bodies and they can easily keep contact with the beneficiary farmers. The GPSS also earns a share of interest from the KCC beneficiaries. As the GPSS is an elected body, the release of credit to the needy farmers at times, depends on political considerations. By and large, the recovery of loan in case of the Assam Co-op. Apex Bank Ltd. was better than that of the other financial institutions. Although the AGVB/LDRB is especially meant for rural areas because of some technical problems such as power shortage, poor internet facilities, shortage of staff, *etc*. the rate of recovery of loan was recorded to be low. The SBI and

UBI are the nationalized banks and they have their own line of working. They were found to pay less attention to the farmers, may be because of many other professional activities besides the KCC scheme. Moreover, shortage of staff in these banks hampered a lot to keep physical contact of with the beneficiary farmers resulting in low recovery of loan. Frequent transfer of officials associated with the KCC, was yet another reason of poor recovery of loan.

Table – 4.18
Factors Influencing Access of Credit under KCC Scheme
(Dependent variables: '1'for KCC beneficiary otherwise '0')

Sl. No.	Independent Variables		Coefficient (S.E)	P-Value
1	Age		-0.115 (0.027)	0.000*
2	Education	Upto primary	6.065 (1.598)	0.000*
3		Upto Class X	5.130 (1.603)	0.001*
4		HSLC Passed	6.208 (1.647)	0.000*
5		HSSLC Passed	3.765 (1.543)	0.015*
6	Family Size		-0.670 (0.181)	0.000*
7	Operational Holding		9.266 (1.410)	0.000*
8	Agril. Farm Income		0.000 (0.000)	0.001*
9	Ratio of Irrigated land to the total operational area		1.526 (1.432)	0.287
10	Farm Asset Value		0.000 (0.000)	0.274
11	Constant		-1.205 (2.105)	0.567
12	**-2 Log Likelihood**		**134.784**	
13	**Cox & Snell R^2**		**0.424**	
14	**Nagelkerke R^2**		**0.670**	

Note: '*' significant at 5% probability level

In order to identify the factors that influenced the farmers in accessing credit under KCC scheme, logistic regression model was used by taking relevant independent variables as shown in the table 4.18. In the analysis, multicollinearity test was conducted among the independent variables before using the logit regression.

It is observed from the table that the age, education, family size, operational holdings and agricultural farm income were the significant factors that influenced the respondent farmers in accessing credit under the KCC scheme.

Summary

Prior to the introduction of KCC scheme, the agricultural credit was given in terms of crop loan. Now, the crop loans are given under the KCC scheme. The advance under agriculture & allied activities increased at the rate of 15.44 per cent (ACGR) during 2003-04 to 2012-13. But notably, the year 2012-13 marked decline in advances as compared to the year 2011-12. The ACGR of crop loan grew at the rate of 19.23 per cent. However, per capita and per family crop loan did not show any significant rise during the reference period. The decreasing trend of credit advance in the last year over the previous year might be due to shortfall in repayment for which

the financial institutes were reluctant to disburse the eligible amounts to the loan seekers.

The outstanding advances against agricultural & allied sectors in Assam increased from 9.48 per cent in 2004-05 to 20.15 per cent in 2012-13 registering an ACGR of 9.87 per cent.

In the state, the number of card issued increased from 94377 in 2003-04 to 3,08,306 in 2013-14 with an ACGR of 18.46 per cent while the amount of advance increased from Rs.9,728.6 lakh to Rs.1,50,567.42 lakh during the reference period with an ACGR of 37.92 per cent. The cumulative achievement of Kishan Credit Card issued, stood at 1,586,687 for an amount of Rs. 1,551,091.21 lakh at the end of 2013-14.

The area covered by each KCC was 29.27 hectares in terms of the net cropped area and 41.93 hectares in terms of gross cropped area in 2003-04 which reduced to 7.57 hectares and 11.04 hectares against the net and gross cropped area, respectively during 2011-12. The estimated amount of advance against each card showed an increasing trend from Rs. 10,308.00 in 2003-04 to Rs.35,084 in 2011-12. The per hectare estimated advance of each KCC was recorded at a very lower side compared to the per hectare cost of cultivation of any field crops in the state. But it showed an increasing trend, *i.e.,* from Rs.353/ha. to Rs. 4,653/ha during the reference period. The crop specific policy under the KCC scheme launched during 2011-12 can be a panacea for credit inadequacy of capital-starved farmers of the state.

From the analysis carried out on the secondary level time series data, it was seen that there exists a positive relationship between the food grain production and amount of crop loan *i.e.,* the production varied directly with the amount of loan. A statistic was further worked out to measure the share of loan per quintal of production of food-grains. Accordingly, the estimated amount of loan per quintal of food-grains was Rs. 21.97 in 2004-05 which increased to Rs.270.27 in 2013-14. It might be due to the application of the required inputs in the crop field by the farmers availing crop loan. A simple linear regression model was also tried in order to draw a statistical interpretation taking production of food-grains (Y) as the dependent variable and the crop loan as the independent variable (X). It was seen that the constant and the dependent variable, crop loan had a significant effect on the food-grain production of the state.

The share of crop loan to the agricultural GSDP of the state registered an increase from 0.69 per cent in 2004-05 to 9.87 per cent in 2013-14 .It was seen that

the agricultural GSDP is increasing along with the increase in crop loans during the period under reference.

To draw a statistical inference, a simple linear regression model was tried on the data taking the agricultural GSDP of the state as dependent variable (Y) and the crop loan as independent variable(X). The results showed that the constant and the dependent variable, crop loan had a significant effect on the agricultural GSDP of the state.

In order to see the impact of the KCC scheme, some of the important primary data were analyzed further for a season-wise analysis of yield rate of the crops grown by the beneficiary and non beneficiary farmers in the study area. All the beneficiary farmers obtained higher yield in both the seasons as compared to the non-beneficiary farmers and so was seen in respect of gross return from produce in terms of rupee per hectare.

However, in case of subsidiary income per household, the beneficiary farmers registered a decline of 2.29 per cent over the non-beneficiary farmers. The estimated annualised value per hectare on capital farm assets was also found in the higher side by 8.62 per cent in case of non-beneficiary farmers. It might be due to more number of power tillers possessed by the non- beneficiary farmers. The beneficiary farmers recorded a cropping intensity of 148.44 against 142.12 per cent in case of non-beneficiary farmers. The analysis of data clearly established positive impact of the KCC scheme on crop production as a whole. The worked out BCRs (Benefit Cost Ratio) of both *kharif* and *rabi* crops were found marginally higher in each farm size groups in respect of beneficiary farmers than that of the non-beneficiary farmers. Combining all crops of *kharif* and *rabi* season, the overall BCR stood at 1.73:1 and 1.64:1 for beneficiary and non-beneficiary farmers, respectively. By and large, it has been observed that the beneficiary farmers reaped higher benefits in terms of gross return per hectare over the non-beneficiary farmers. It might be the effect of the KCC possessed by the beneficiary farmers.

The share of outstanding amount of loan under KCC in the gross income from agriculture and subsidiary income combined were worked out and the situation was not found to be encouraging. The highest loan burden of 46.76 per cent of the gross income from agriculture was really a matter of concern especially for the marginal farmers. However, the share of outstanding loan decreased gradually from the small to the large farm size group of beneficiaries. It stood at 22.81 per cent against the small, 11.07 per cent against the medium and 5.12 per cent against the large farm size group

with an overall average share of 21.83 per cent. When the agricultural income was combined with the subsidiary income, the share of outstanding dues came down significantly. Obviously, the subsidiary income was very important for repayment of the outstanding loans of the farmers. With the combined income, the share of outstanding dues came down to 22.41 per cent against the marginal, 14.34 per cent against the small, 8.77 per cent against the medium and 4.43 per cent against the large farm size group with an overall share of 14.18 per cent. Thus, it was seen that the higher size group of farmers were at better off position when considered in terms of outstanding amount of loan.

A loanee has to repay the loan within 12 months from the date of sanction of the loan. Repayment may be made for any amount by any number of instalments. If a loanee can repay the amount within the year, he can go for second loan as per guidelines for the next year and on the basis of the repayment performance, a loanee can avail the loan up to five years at 10 per cent increase of the previous year loan. In the field survey, very few farmers were found to opt for second loan as they were not able to repay the earlier loan on time.

The KCC-guidelines stipulate the repayment status of the beneficiary farmers of the KCC scheme across the four different size group of farmers. The percentage of sample farmers found under the head "Standard" was 12.82 per cent for marginal, 18.10 per cent for small and 20.93 per cent for medium with an overall average figure of 16.67 per cent. A larger percentage of sample households were found to fall under the head of "NPAs". At overall level, it stood at 83.33 per cent. Thus “NPAs “has become a contentious issue for the banking institution these days. It might be due to lack of awareness, communication gap between the farmers and the financial institutes, or decline in net return of the crops from the expected level, or pre-assumption of waiving of loan or might be for diversion of the loan amount for non productive purpose to meet the day to day family requirement.

By and large, the recovery of loan in case of the Assam Co-op. Apex Bank Ltd. was better than that of the other financial institutions. Although the AGVB/LDRB is especially meant for rural areas, because of some technical problems such as power shortage, poor internet facilities, shortage of staff, *etc.* the rate of recovery of loan was recorded to be low. The SBI and UBI are the nationalized banks and they have their own line of working. They were found to pay less attention to the farmers, may be because of many other professional activities undertaken by them

besides the KCC scheme. Moreover, shortage of staff in these banks hampered a lot to keep physical contact with the beneficiary farmers resulting in low recovery of loan. Frequent transfer of officials associated with the KCC, was yet another reason of poor recovery of loan.

Further, the logistic regression model revealed that the age, education, family size, operational holdings and agricultural farm income were the significant factors that influenced the respondent farmers in accessing credit under the KCC scheme.

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Chapter -V
Constraints of accessing credit

In this chapter, on the basis of the farmer's opinion and investigators' observations, an attempt has been made to assess the constraints faced by the sample farmers in accessing and utilization of credit.

Table-5.1 presents the responses of the loanees towards lending agencies across different farm sizes. The average distance from the respondent's households to the lending institutes was 6.99 km. On an average, each loanee had to visit 2.48 times to get the loan sanctioned. The average expenditure for each visit was worked out at Rs. 64.39. There were two types of disbursement facilities provided by the lending institutes *viz.*, by cheque or by direct credit. In the study area, disbursement of credit (100%) was done directly by crediting the saving bank account of the loanees.

Table-5.1
Basic information of loanees relating to the lending institute in accessing the credit

Sl. No.	Queries		Marginal	Small	Medium	Large	Total
		No of HH --->	78	116	43	3	240
1	Average distance from residence to lending Institute (in Km.)		6.24	6.94	8.63	3.33	6.99
2	Average no. of visits required to get the credit (in nos.) sanctioned		2.65	2.45	2.23	2.00	2.48
3	Average expenditure per visit (in Rs.)		60.19	65.96	68.91	61.67	64.39
4	Disbursements facilities provided by the lending institute (in percentage):	(a) Cheque	0.00	0.00	0.00	0.00	0.00
		(b) Directly credited to the S/B account	100.00	100.00	100.00	100.00	100.00
5	Withdrawal of loan through (in Percentage):	(a) ATM/Debit card	0.00	0.00	0.00	0.00	0.00
		(b) Savings bank withdrawal form	100.00	100.00	37.21	33.33	87.92
		(c) Cheque book	0.00	0.00	62.79	66.67	12.08
6	What was your feelings on Bank officials:	(a) Cooperative	88.46	93.97	95.35	100.00	92.50
		(b) Not up to the mark	11.54	6.03	4.65	0.00	7.50
7	What is your overall comment about the Scheme (KCC) :	(a) Poor	0.00	0.00	0.00	0.00	0.00
		(b) Moderate	32.05	31.03	32.56	0.00	31.25
		(c) Good	64.10	64.66	60.47	66.67	64.90
		(d) Excellent	3.85	4.31	6.98	33.33	3.85

Source: Primary data

However, there was no report of using any ATM or debit card. For withdrawal purpose, all the sample farmers belonging to the marginal and small size group used withdrawal forms. Nearly, 62.79 and 66.67 per cent of the sample borrowers used cheque books in case of medium and large size group, respectively. At over all level, 87.92 per cent borrowers used saving bank withdrawal form and 12.08 per cent used cheque books. About, 92.50 per cent of the total sample borrowers considered the bank officials to be cooperative and 7.50 per cent opined as not up to the mark. The overall comment on the scheme (KCC), was reported to be moderate by 31.25 per cent, good by 64.90 per cent and excellent by 3.85 per cent of the total sample beneficiaries.

Table-5.2 visualizes the problems faced by the beneficiary farmers in accessing the credit. It was observed that no beneficiaries came across any difficulties in accessing the information about the scheme. So far as bank's paper works are concerned, only 14.17 per cent reported about some difficulties and 85.83 per cent had no problems at all. Regarding rigidness of the terms and conditions of the lending institutions, 100 per cent sample households opined in the negative *i.e.,* they found it very flexible and hassles free. However, only 14.17 per cent of the sample beneficiaries were aware of the provision of relaxation of interest for timely repayment of loan and a large majority (85.83 per cent) of the beneficiaries did not know anything about it. Also, all the sample beneficiaries were ignorant about the ongoing policy initiatives of the Government for providing relief during natural calamities. Nearly, 36.67 per cent of the sample beneficiaries found the prevailing rate of interest to be too high and 63.33 per cent opined otherwise. As per terms and conditions, if a borrower can repay the loan in one year from the date of sanction, he can go for the second loan which may be higher than that of the first year loan. The banks in that case, do not impose any fixed number of installments and borrowers are given full liberty to repay the loan with any amount in each installment within the year as per their convenience. In spite of a number flexibilities, nearly, 32.08 per cent of the sample beneficiaries considered the repayment period to be too short and 67.92 per cent reported otherwise.

However, all the respondents of the study area considered the present credit policy as beneficial to them. It was also reported that no processing fee had to be paid to the financial institute at the time of accessing the credit. Many a time, the bank officials had to take the help of well known persons of the locality to identify the borrowers. This practice also helped a lot for the recovery of the loans. Sometimes, borrowers also used to ask for their help for transaction with the banks. However, in some places, middle man acted as commission agents as well. The borrowers had to pay some amount of money in return of their services. In certain areas, the share of commission agent was found exorbitantly high and they sometimes used to misguide the beneficiaries with a notion that they need not have to return the loan amount as the same would be waived by the Government later on, as was done in the past. The bank officials were aware of the activities of these agents but no concrete steps could be taken to contain them. About 48.75 per cent of the borrowers reported that they had to pay those agents for getting their job done. No political intervention was reported amongst the credit seekers. Regarding adequacy of loan amount,

Table-5.2
Problems faced by the Beneficiary Farmers in accessing the credit
(Multiple Response)

Sl.No.	Queries	Marginal (78) (% of HHs)		Small (116) (% of HHs)		Medium (43) (% of HHs)		Large (3) (% of HHs)		Total (240) (% of HHs)	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1	Have you faced any difficulty to get the information about the scheme?	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00
2	Did you face any trouble to handle the bank's Papers?	16.67	83.33	13.79	86.21	11.63	88.37	0.00	100.00	14.17	85.83
3	Did you think that the terms and conditions of the lending institution were very rigid in nature?	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00
4	Did you aware of any incentive against the interest fixed by the banks for timely repayment of loan?	7.69	92.31	15.52	84.48	20.93	79.07	33.33	66.67	14.17	85.83
5	Did you enjoy any relief on account of policy initiatives of the Government due to natural calamities?	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00
6	Do you think that interest rate is too high?	38.46	61.54	36.21	63.79	34.88	65.12	33.33	66.67	36.67	63.33
7	Did you think that repayment period is too short?	38.46	61.54	30.17	69.83	27.91	72.09	0.00	100.00	32.08	67.92
8	Do you think that the amount of installment (repayment) is too high?	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00
9	Do you think that the present credit policy is beneficial to you?	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00
10	Did you pay any processing fee to the lending institute at the time of accessing the credit?	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00
11	Did you pay any bribe to any agent to sanction the loan?	51.28	48.72	48.28	51.72	46.51	53.49	33.33	66.67	48.75	51.25
12	Did you ask for any political help to be selected as a beneficiary?	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00
13	Do you think that the amount of loan is adequate?	19.23	80.77	17.24	82.76	18.60	81.40	33.33	66.67	18.33	81.67
14	Do you have ATM/Debit card for transaction?	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00
15	If not, do you apply for it?	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00
16	Did you have any agricultural credit prior to this scheme?	0.00	100.00	0.00	100.00	4.65	95.35	0.00	100.00	0.83	99.17

Note: Figures in parentheses indicate household nos.
Source: Primary data

18.33 per cent of the respondents reported in the affirmative but a large proportion (81.67 per cent) of the respondents answered in the negative. Also, the respondents did not know the provision of using ATM card/ Debit card and hence they did not apply for ATM card/ Debit card. A query was also asked to know, whether the respondents availed off any agricultural loan prior to this scheme. At overall level, 99.17 per cent of the respondents answered in the negative.

In general, the farmers of the state suffer from inadequacy of basic infrastructure due to paucity of cash capital. Additionally, some more constraints were posed before the farmers to measure the intensity of different problems. Table-5.3 displays multiple responses of the beneficiary farmers on the constraints faced by them in crop cultivation across the different size groups. Against the problem of getting certified seeds, fertilizer and other inputs *viz.,* insecticides, pesticides, micronutrient, *etc.,* on time, only 20.83 per cent of the household said "yes" and 79.17 per cent did not consider it as a problem. The existing irrigation facilities were not considered to be sufficient enough, and about 92.92 per cent of the sample households considered it to be a major problem. The shortage of required input with the local dealers was yet another problem as reported by 46.25 per cent of the sample beneficiaries. Further, nearly 91.67 per cent of the sample borrowers reported that it was not necessary to wait for a long period to avail off hired power tiller or tractor. Extension services from SDAO/KVK were not sufficient enough as reported by 91.67 per cent of the borrowers. Of the total beneficiary samples, only 25.42 per cent considered the marketing infrastructure of the area to be not good enough and the rest reported otherwise. About 72.08 per cent of the sample borrowers knew about the prices of the product to be sold. The sample beneficiaries (83.33 per cent) believed that the prices of the produces are often fixed by the traders/middleman at their will and 97.08 per cent of the sample households found the prices of their produces to be non-remunerative. Only 12 .92 per cent sample respondents could meet their day to day expenditure out of their farm income. Further, 90.33 per cent of the sample beneficiary farmers reported that they did not get their soil tested before taking up crop cultivation.

Table-5.3
Constraints faced by the Beneficiary farmers in Crop cultivation

(Multiple Responses)

Sl.No.	Queries	Marginal (78) (% of HHs)		Small (116) (% of HHs)		Medium (43) (% of HHs)		Large (3) (% of HHs)		Total (240) (% of HHs)	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1	Do you face any problem to get certified seed ,fertilizers and other inputs(pesticides/insecticides/ micronutrient) on time?	25.64	74.36	21.55	78.45	11.63	88.37	0.00	100.00	20.83	79.17
2	Do you face any problem with the existing irrigation facility?	96.15	3.85	93.10	6.90	88.37	11.63	66.67	33.33	92.92	7.08
3	Is there any shortage of required inputs on time with the local agencies?	44.87	55.13	48.28	51.72	46.51	53.49	0.00	100.00	46.25	53.75
4	Do you feel that the waiting time is very long to get hired power tiller and tractor?	15.38	84.62	4.31	95.69	6.98	93.02	0.00	100.00	8.33	91.67
5	Do you think the present wage rate increases the cost of production in your farm?	26.92	73.08	65.52	34.48	88.37	11.63	100.00	0.00	57.50	42.50
6	Do you think that extension services from SDOA/ KVK is sufficient?	2.56	97.44	10.34	89.66	11.63	88.37	33.33	66.67	8.33	91.67
7	Do you think existing market infrastructure in the locality is not good?	24.36	75.64	25.86	74.14	25.58	74.42	33.33	66.67	25.42	74.58
8	Are you aware of the price at which the produces are to be sold?	51.28	48.72	77.59	22.41	93.02	6.98	100.00	0.00	72.08	27.92
9	Do you think that the prices of produce are often fixed by the traders/ middleman at their will?	87.18	12.82	83.62	16.38	76.74	23.26	66.67	33.33	83.33	16.67
10	Do you think the price of farm produces is remunerative?	0.00	100.00	4.31	95.69	4.65	95.35	0.00	100.00	2.92	97.08
11	Do you think that your farm income is sufficient enough to meet the day to day expenditure?	0.00	100.00	8.62	91.38	41.86	58.14	100.00	0.00	12.92	87.08
12	Have you got tested your soil?	0.00	100.00	1.72	98.28	2.33	97.67	33.33	66.67	1.67	98.33

Note: Figures in parentheses indicate household nos.

Source: Primary data

Table-5.4
Responses of the Beneficiary farmers on repayment of loan
(Farmers Opinion and Investigator's Observation)

(Multiple Response)

Sl. No.	Queries	Marginal (78) (% of HHs)		Small (116) (% of HHs)		Medium (43) (% of HHs)		Large (3) (% of HHs)		Total (240) (% of HHs)	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1	Do you agree that non remunerative price of the marketed crops and wastage of perishable crops adversely affected the repayment of loan	25.64	74.36	21.55	78.45	18.60	81.40	33.33	66.67	22.50	77.50
2	Do you agree that high cost of production and lower yield rate are the reason for poor/ late/ non-repayment of loan?	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00
3	Not willing to repay (willful defaulter)	38.46	61.54	87.93	12.07	88.37	11.63	66.67	33.33	71.67	28.33
4	Crop failure due to natural calamities (draught/flood)	7.69	92.31	11.21	88.79	9.30	90.70	0.00	100.00	9.58	90.42
5	Crop loss due to biotic factors (insect/pest attack)	2.56	97.44	1.72	98.28	2.33	97.67	0.00	100.00	2.08	97.92
6	Educational expenditure for children increased	41.03	58.97	38.79	61.21	37.21	62.79	33.33	66.67	39.17	60.83
7	Medical expenditure increased	47.44	52.56	43.10	56.90	37.21	62.79	33.33	66.67	43.33	56.67
8	The price of day to day basic requirements of family increased	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00	0.00

Note: Figures in parentheses indicate HH nos.
Source: Primary data

Table-5.4 highlights the opinion of the respondents on repayment of loan. All the respondents had different types of problems. The intensity of the problem also differed from respondent to respondent for which repayment suffered very often. Here in this table, problems were classified into two heads- agricultural and non-agricultural. The queries at 1, 2, 3 and 4 were linked with agriculture and 5, 6, 7 and 8 were non-agricultural problems. The non-remunerative price of marketed crops and wastage of perishable crops (vegetables) were the major impediments, which resulted in low return. As a result, repayment became difficult for a sizeable number of respondents (22.50 per cent). However, 77.50 per cent respondents pointed out some other issues for poor repayment or non-repayment of loan. Literally speaking, high cost of production and lower yield rate often resulted into reduction in the required economic return per unit of produces for which repayment got affected. All the sample households therefore accepted that high cost and low yield were the principal reasons of poor repayment in the study area. The respondents who intentionally repaid a part of their loan and those who did not repay any amount at all were categorized as willful defaulter. At overall level, nearly 71.67 per cent respondents were identified as willful defaulters in the study area. They had a wrong notion that the loan might finally be waived by the banks/Government. Crop failure due to natural calamities was yet another reason for which a section of the loanees had to encounter difficulties in repayment (9.58 per cent). The rest 90.42 per cent did not have any experience of facing any natural calamities. Crop loss due to biotic factors (insect/pest attack) was not a major factor for poor repayment or non-repayment; only 2.08 per cent of the sample households replied in the affirmative. About, 39.17 per cent of the respondents reported that they had the problem of repayment as the educational expenditure for their children increased quite a lot over time. Apart from these, the intensity of problems of non-repayment of loan was very high because of continuous price hike of the essential commodities, as reported by all the sample farmers.

Table-5.5 displays the responses of the non-beneficiaries on non-participation in the KCC scheme across different farm size groups. Of the total sample non-beneficiaries, 21.67 per cent opined that they were not at all aware of the scheme and its benefits. About 43.33 per cent of the non beneficiary farmers applied for KCC but were not selected and there were some 33.33 per cent non-beneficiaries, who were interested but yet to apply. On the whole, each and every respondent showed their interest for the scheme and given an opportunity, they would readily join the scheme.

Table-5.5
Reasons of non-participation in the KCC Scheme
(only for Non-beneficiary)

(% of HHs)

Sl. No.	Reasons	Marginal	Small	Medium	Large	Total
	No of Respondent	**16**	**33**	**7**	**4**	**60**
1	Lack of awareness about the Scheme	31.25	21.21	14.29	0.00	21.67
2	Applied but not selected	25.00	45.45	57.14	75.00	43.33
3	Interested but not applied yet	43.75	33.33	14.29	25.00	33.33
4	Not interested	0.00	0.00	0.00	0.00	0.00

Source: Primary data
Note: Each respondent was asked to choose only one reason.

Table-5.6 indicates the reasons of not being selected under the scheme as perceived by the non-beneficiary sample farmers. The queries were asked to 26 respondents who applied but not selected under the scheme. Interference of middle men/agents (65.38 per cent), biasedness in selection process (23.08 per cent) and limited resources of the financial institute (11.54 per cent) were the three primary reasons of not being selected as beneficiaries of the KCC scheme, as percieved by the sample non-beneficiary households.

Table-5.6
Reasons of Not being Selected under the KCC Scheme
(only those Non-beneficiaries who applied but not selected)

Sl. No.	Reasons for Not being Selected	Marginal	Small	Medium	Large	Total
	No of Respondent	**4**	**15**	**4**	**3**	**26**
1	Due to biasedness in selection of farmers	25.00	20.00	25.00	33.33	23.08
2	Interference of middleman/Agent	75.00	66.67	50.00	66.67	65.38
3	Limited Resources of the Lending institute	0.00	13.33	25.00	0.00	11.54

Source: Primary data
Note: Each respondent was asked to choose only one reason

Summary

The responses towards the leading agencies together with the constraints encountered by the sample farmers are summarized here in this section.

The average distance from the respondent's households to the lending institutes was 6.99 km. On an average, each loanee had to visit 2.48 times to get the loan sanctioned. The average expenditure for each visit was worked out at Rs.64.39.

In the study area, disbursement of credit (100%) was done directly by crediting the saving bank account of the loanees.

There was no report of using any ATM or debit card by the sample beneficiaries. All he sample farmers belonging to marginal and small size group used withdrawal forms. Nearly, 62.79 and 66.67 per cent of the sample borrowers used cheque books in case of medium and large size group, respectively. At over all level, 87.92 per cent borrowers used saving bank withdrawal form and 12.08 per cent used cheque books.

Nearly, 92.50 per cent of the total sample borrowers considered the bank official to be cooperative and 7.50 per cent opined as not up to the mark.

The overall comment on the scheme (KCC) was reported to be moderate by 31.25 per cent, good by 64.90 per cent and excellent by 3.85 per cent of the total sample beneficiaries.

It was observed that no beneficiaries came across any difficulties in accessing the information about the scheme. So far as bank's paper works are concerned, only 14.17 per cent reported about some difficulties and 85.83 per cent had no problems at all.

Regarding rigidness of the terms and conditions of the lending institutions, 100 per cent sample households opined in the negative *i.e.*, they found it very flexible and hassles free. However, only 14.17 per cent of the sample beneficiaries were aware of the provision of relaxation of interest for timely repayment of loan and a large majority (85.83 per cent) of the beneficiaries did not know anything about it.

Also, all the sample beneficiaries were ignorant about the ongoing policy initiatives of the Government for providing relief during natural calamities.

Nearly, 36.67 per cent of the sample found the prevailing rate of interest to be too high and 63.33 per cent opined otherwise.

In spite of a numbers of flexibilities, nearly, 32.08 per cent of the sample beneficiaries considered the repayment period to be too short and 67.92 per cent reported otherwise.

However, all the respondents of the study area considered the present credit policy as beneficial to them. It was also reported that no processing fee had to be paid to the financial institute at the time of accessing the credit.

In some places, middle man acted as commission agents as well. In certain areas, as reported by the sample beneficiaries, the share of commission agent was exorbitantly high and they sometimes used to misguide the beneficiaries with a notion that they need not have to return the loan amount as the same would be waived by the Government later on, as was done in the past. The bank officials were aware of the

activities of these agents but no concrete steps could be taken to contain them. Some 48.75 per cent of the borrowers reported that they had to pay those agents for getting their job done.

No political intervention was reported amongst the credit seekers. Regarding adequacy of loan amount, 18.33 per cent of the respondents reported in the affirmative but large proportion (81.67 per cent) of the respondents answered in the negative.

A query was also made whether the respondents availed off any agricultural loan prior to this scheme. At overall level, 99.17 per cent of the respondents answered in the negative.

In general, the farmers of the state suffer from inadequacy of basic infrastructure due to paucity of cash capital. Against the problem of getting certified seeds, fertilizer and other inputs (insecticides, pesticides, micronutrient, *etc*.,) on time, only 20.83 per cent of the households said "yes" and 79.17 per cent did not consider it as a problem.

The existing irrigation facilities were not considered to be sufficient enough, and about 92.92 per cent of the sample households considered it to be a major problem.

The shortage of required input with the local dealers was yet another problem as reported by 46.25 per cent of the sample beneficiaries.

Further, nearly 91.67 per cent of the sample borrowers reported that there was no problem of getting hired power tiller or tractor on time.

Extension services from SDAO/KVK were reported to be inadequate by 91.67 per cent borrowers.

Of the total beneficiary samples, only 25.42 per cent considered the marketing infrastructure of the area to be not good enough and the rest reported otherwise.

The sample beneficiaries (83.33 per cent) believed that the prices of the produces are often fixed by the traders/middleman at their will. And 97.08 per cent of the sample households found the prices of their produces to be non-remunerative. Only 12 .92 per cent sample respondents could meet their day to day expenditure out of their farm income. Further, 90.33 per cent of the sample beneficiary farmers reported that they did not get their soil tested before the crop cultivation.

All the respondents had to come across different types of problems of repayment. The intensity of the problem also differed from respondent to respondent for which repayment suffered very often. The problems could be classified into two

heads- agricultural and non-agricultural. The non-remunerative price of marketed crops and wastage of perishable crops (vegetables) were the major impediments, which resulted in low return. As a result, repayment became difficult on the part of a sizeable number of respondents (22.50 per cent). However, 77.50 per cent respondents pointed out some other issues for poor repayment or non-repayment of loan. Literally speaking, high cost of production and lower yield rate often resulted into reduction in the required economic return per unit of produces for which repayment got affected. All the sample households therefore accepted that high cost and low yield were the principal reasons of poor repayment in the study area. The respondents who intentionally repaid a part of their loan and those who did not repay any amount at all were categorized as willful defaulter. At overall level, nearly 71.67 per cent respondents were identified as willful defaulters in the study area. They had a wrong notion that the loan might finally be waived by the banks/Government. Crop failure due to natural calamities was yet another reason for which a section of the loanees had to encounter difficulties in repayment (9.58 per). Crop loss due to biotic factors (insect/pest attack) was not a major factor for poor repayment or non-repayment; only 2.08 per cent of the sample households replied in the affirmative. About, 39.17 per cent of the respondents reported that they had the problem of repayment as the educational expenditure for their children increased quite a lot over time. Apart from these, the intensity of the problem of non-repayment of loan was very high because of continuous price hike of essential commodities, as reported by all the sample households.

Of the total sample non-beneficiaries, 21.67 per cent opined that they were not at all aware of the scheme and its benefits. About 43.33 per cent of the non beneficiary farmers applied for KCC but were not selected and there were some 33.33 per cent non-beneficiaries, who were interested but yet to apply. On the whole, each and every respondent showed their interest for the scheme and given an opportunity, they would readily join the scheme.

The queries were asked to as many as 26 respondents who applied but not selected as beneficiaries under the scheme. Interference of middle men/agents (65.38 per cent), biasedness in selection process (23.08 per cent) and limited resources of the financial institute (11.54 per cent) were the three primary reasons of not being selected as beneficiaries of the KCC scheme, as perceived by the sample non-beneficiary households.

Chapter-VI

Recommendation and Policy suggestion

On the basis of the field survey and observations made by the investigators, the following recommendations and policy suggestions can be drawn.

1. Synchronization of the activities of financial institutes, state department of agriculture and the loanees is a must for success of the KCC scheme in true sense of the term. (Action: Concerned Banks and State Agriculture Department)
2. Regular supervision and monitoring on the part of the financial institutes and/ or Nodal Department is an action forward to ensure proper utilization of loan obtained against the KCC. The officials of the banks have a suggestion that the agriculture department should be given responsibilities to see whether the borrowers are using the loan properly. Otherwise, the noble purpose of the agricultural credit will distract from its target. (Action: Concerned Banks and State Agriculture Department)
3. The farmers are to be brought under the National Agricultural Insurance Scheme (NAIS) in order to protect them from crop losses on account of biotic and abiotic factors.(State Agricultural Departments and the Ministry of Agriculture & Farmers Welfare, Govt. of India)
4. Defaulters of loan are to be treated as per rules of the land. (Action: Concerned Bank authority)
5. Any bad elements in the system, right from credit sanctioning to credit distribution should be eliminated and exemplary punishment /penalty should be imposed upon him/her who is found guilty. (Action: Concerned Bank authority)
6. State Agriculture Department with its strong net work of extension machinery should strive for ensuring necessary support to ward off the problems of crop cultivation for efficient utilization of crop loan under the KCC scheme. (Action: Concerned Banks and State Agriculture Department)
7. Introduction of proven varieties, provision of adequate irrigation water mechanization of some agricultural activities and improvement of marketing infrastructure can help the farmers quite a lot to generate more income, thereby making them better off to repay the loaned amount at regular interval. (Action: State Agriculture Department, State Irrigation Department)

8. Soil Health Card may be issued to the KCC holders so that they can judiciously use soil nutrients (fertilizer, bio-fertilizer, FYM, green manure, micronutrient, lime, *etc*.) in the crop field to raise the level of production and productivity. (Action: State Agriculture Department)
9. The Government may come forward to create an authentic data base of the farmers with unique identity, which may in the long run benefits enormously in course of implementation of the developmental programme meant for the farming community. (Action: State Agriculture Department)
10. Relief may be given to the debt-ridden farmers in terms of interest-free loan at least for few years. (Action: Ministry of Agriculture and Farmers Welfare, Govt. of India)
11. In view of their wider net work in rural areas, the Cooperative Apex Bank and Gramin Bikash Bank may be strengthened in terms resources & horizontal expansion. (Action: State Department of Finance and NABARD)
12. Also, extensive capacity building programme are to be launched to make the farmers aware of the intricacies of modern technology to reap a good harvest for repayment of loan on time. (Action: State Agriculture Department and Ministry of Agriculture and Farmers Welfare, Govt. of India)
13. It has been observed that a large majority of the sample beneficiary farmers were enlisted under NPAs by the respective banks. As such, radical measures are needed to be initiated to take care of the alarming problem of bad debt. (Action: Concerned Banks)
14. The beneficiary selection process should be made more transparent so as to extend the benefits to the really interested farmers. (Action: Concerned Banks)

Concluding Remarks

The revised KCC scheme is no doubt an important policy initiative of the Government of India to protect the farmers from the clutches of private money lenders. If implemented in right perspectives, it can contribute to improve the rural economy through agricultural development in particular and the State economy in general. In a capital starved state like Assam, if the scheme is channelized properly, it can do wonders for the benefits of the farming community. And it will be possible only when, the farmers themselves, the administrators & field functionaries together make a concerted effort to implement the scheme in right earnest.

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Appendix-I (A.1)
Cost of cultivation of Paddy (*Kharif*) (operation wise)

Sl.No.	Inputs		Marginal		Small		Medium		Large		Over all	
	Items	Particulars	B	NB	B	NB	B	NB	B	NB	B	NB
1	Area	(in Ha.)	50.48	11.69	146.67	39.52	100.99	18.29	18.52	17.80	316.66	87.30
2	Seed	Quantity (in kg)	2,423.13	561.35	7,040.26	1,896.87	4,847.55	877.88	888.80	854.23	15,199.74	4,190.33
		Value (in Rs.)	60,578.31	14,033.73	176,006.43	47,421.69	121,188.76	21,946.99	22,220.08	21,355.82	379,993.57	104,758.23
3	Land preparation	Tractor/ PT										
		Owned (in Rs.)	0.00	0.00	11,733.76	0.00	41,492.00	9,153.54	80,547.79	75,279.28	133,773.55	84,432.82
		Hired (in Rs.)	339,390.00	78,624.00	986,076.00	265,680.00	648,784.00	99,127.23	0.00	0.00	1,974,250.00	443,431.23
		Bollock Labour										
		Owned (in Rs.)	9,843.98	2,865.22	22,734.16	5,532.53	17,673.36	7,681.45	0.00	0.00	50,251.50	16,079.20
		Hired (in Rs.)	16,255.18	2,572.85	6,160.22	4,742.17	0.00	0.00	0.00	0.00	22,415.41	7,315.02
		Human Labour										
		Owned (in Rs.)	12,620.48	2,923.69	22,000.80	5,927.71	7,574.30	1,371.69	925.84	889.83	43,121.42	11,112.92
		Hired (in Rs.)	0.00	0.00	14,667.20	3,951.81	17,673.36	3,200.60	3,703.35	3,559.30	36,043.91	10,711.71
		Total	378,109.64	86,985.77	1,063,372.16	285,834.22	733,197.02	120,534.50	85,176.97	79,728.41	2,259,855.79	573,082.89
4	Plantation / sowing	Hired labour	75,420.00	17,472.00	438,256.00	118,080.00	422,464.00	76,507.20	85,758.40	95,716.80	1,021,898.40	307,776.00
		Family labour	207,405.00	48,048.00	383,474.00	103,320.00	150,880.00	27,324.00	6,916.00	6,647.00	748,675.00	185,339.00
		Total	282,825.00	65,520.00	821,730.00	221,400.00	573,344.00	103,831.20	92,674.40	102,363.80	1,770,573.40	493,115.00
5	Fertilizer	Quantity (in Qtl.)	50.48	10.53	220.01	59.28	171.68	30.18	37.03	35.59	479.21	135.57
		Value (in Rs.)	43,414.46	9,051.76	189,206.91	50,978.31	147,648.30	25,952.31	31,848.78	30,610.01	412,118.45	116,592.40
6	FYM	Quantity (in Qtl.)	565.65	110.95	1,785.89	472.32	1,101.42	198.10	221.31	206.06	3,674.28	987.42
		Value (in Rs.)	113,130.00	22,189.44	357,178.64	94,464.00	220,284.80	39,619.80	44,262.40	41,211.40	734,855.84	197,484.64
7	Bio-fertilizer	Quantity (in Qtl.)	207.41	43.68	690.25	177.12	490.36	84.70	82.99	79.76	1,471.01	385.27
		Value (in Rs.)	145,183.50	30,576.00	483,177.24	123,984.00	343,252.00	59,293.08	58,094.40	55,834.80	1,029,707.14	269,687.88
8	Micronutrient	Quantity (in kg)	393.76	87.71	1,466.72	395.18	1,262.38	230.44	342.56	338.13	3,465.42	1,051.47
		Value (in Rs.)	17,719.16	3,946.99	66,002.41	17,783.13	56,807.23	10,369.95	15,415.18	15,216.02	155,943.98	47,316.10
9	Insecticides/ presides	Quantity (in Lit.)	10.10	2.34	36.67	9.88	25.25	4.57	4.63	4.45	76.64	21.24
		Value (in Rs.)	7,572.29	1,754.22	27,501.00	7,409.64	18,935.74	3,429.22	3,471.89	3,336.85	57,480.92	15,929.92
10	Labour Charge (application of the items 5,6,7,8 &9)	Value (in Rs.)	12,620.48	2,923.69	44,001.61	11,855.42	37,871.49	6,858.43	7,036.36	6,762.68	101,529.93	28,400.23
11	Weeding Charges	(in Rs.)	9,086.75	2,105.06	29,334.40	7,903.61	15,148.59	2,743.37	1,851.67	1,779.65	55,421.42	14,531.70
12	Irrigation Charge	(in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Harvesting	Hired labour	18,855.00	4,368.00	328,692.00	88,560.00	301,760.00	53,281.80	62,244.00	59,823.00	711,551.00	206,032.80
		Family labour	150,840.00	34,944.00	164,346.00	44,280.00	37,720.00	8,197.20	0.00	0.00	352,906.00	87,421.20
		Total	169,695.00	39,312.00	493,038.00	132,840.00	339,480.00	61,479.00	62,244.00	59,823.00	1,064,457.00	293,454.00
14	Carrying charge from farm field to farm house	Manual	30,289.16	7,016.87	59,402.17	16,004.82	30,297.19	5,486.75	3,703.35	3,559.30	123,691.86	32,067.74
		Hired Vehicle	7,572.29	1,754.22	50,601.85	13,633.73	45,445.78	8,230.12	10,184.20	9,788.09	113,804.12	33,406.16
		Total	37,861.45	8,771.08	110,004.02	29,638.55	75,742.97	13,716.87	13,887.55	13,347.39	237,495.98	65,473.90
15	Threshing Charge	Manually	25,240.96	5,847.39	51,335.21	13,831.33	20,198.13	3,657.83	3,703.35	3,559.30	100,477.64	26,895.85
		Mechanically	45,433.73	10,525.30	168,672.82	45,445.78	131,287.82	23,775.90	23,145.92	22,245.65	368,540.29	101,992.64
		Total	70,674.70	16,372.69	220,008.03	59,277.11	151,485.94	27,433.73	26,849.26	25,804.95	469,017.94	128,888.49
16	Winning & Storing	Hired labour	7,572.29	1,754.22	36,668.01	9,879.52	35,346.72	6,401.20	8,332.53	8,008.43	87,919.54	26,043.37
		Family labour	20,192.77	4,677.91	44,001.61	11,855.42	20,198.13	3,657.83	1,851.67	1,779.65	86,244.18	21,970.82
		Total	27,765.06	6,432.13	80,669.61	21,734.94	55,544.85	10,059.04	10,184.20	9,788.09	174,163.72	48,014.19
17	Marketing expenditure	(in Rs.)	2,524.10	584.74	22,000.80	5,927.71	25,247.66	4,572.29	6,480.86	6,228.78	56,253.41	17,313.52
18	Estimated Annualised Value (10% on capital assets)	(in Rs.)	24,620.54	5,692.32	62,520.42	12,597.57	81,769.08	15,014.12	38,331.49	31,013.10	207,241.53	64,317.11
19	5% annual intt.	(in Rs.)	1,231.03	284.62	3,126.02	629.88	4,088.45	750.71	1,916.57	1,550.66	10,362.08	3,215.86
20	Sub Total	(in Rs.)	1,391,990.97	313,612.54	4,204,876.09	1,119,824.37	2,963,165.39	520,746.18	514,909.72	498,992.74	9,074,942.17	2,453,175.82
21	Managerial expenditure (12% of the total expenditure incurred)	(in Rs.)	167,038.92	37,633.50	504,585.13	134,378.92	355,579.85	62,489.54	61,789.17	59,879.13	1,088,993.06	294,381.10
22	Total Cost	(in Rs.)	1,559,029.89	351,246.05	4,709,461.22	1,254,203.29	3,318,745.24	583,235.72	576,698.88	558,871.87	10136935.23	2,747,556.92
23	**Cost Per Hectare**	**(in Rs.)**	**30,882.93**	**30,034.43**	**32,108.79**	**31,737.46**	**32,861.91**	**31,889.70**	**31,144.74**	**31,403.44**	**32,097.18**	**31,473.12**
24	**Gross Return Per Hectare**	**(in Rs.)**	**56,926.37**	**51,488.47**	**58,392.56**	**53,800.83**	**54,565.55**	**52,061.85**	**53,748.57**	**50,318.34**	**56,666.74**	**52,416.81**
25	**BCR**		**1.84**	**1.71**	**1.82**	**1.70**	**1.66**	**1.63**	**1.73**	**1.60**	**1.77**	**1.67**

Source: Primary data

Appendix-I (A.2)
Cost of cultivation of Vegetables (*Kharif*) (operation wise)

Sl.No.	Inputs		Marginal		Small		Medium		Large		Over all	
	Items	Particulars	B	NB	B	NB	B	NB	B	NB	B	NB
1	Area	(in Ha.)	1.68	0.32	5.64	1.32	2.74	0.60	0.71	0.58	10.77	2.82
2	Seed/ Seedling	Quantity (in kg)	21.00	4.08	73.38	17.17	35.35	7.71	9.27	7.57	138.99	36.53
		Value (in Rs.)	10,500.00	2,040.00	36,688.20	8,586.60	17,673.00	3,855.00	4,632.75	3,784.50	69,493.95	18,266.10
3	Land preparation	Tractor/ PT										
		Owned (in Rs.)	0.00	0.00	451.20	0.00	479.50	120.00	1,526.50	1,247.00	2,457.20	1,367.00
		Hired (in Rs.)	5,019.84	956.16	16,852.32	3,944.16	8,187.12	1,792.80	0.00	0.00	30,059.28	6,693.12
		Bollock Labour										
		Owned (in Rs.)	159.60	0.00	507.60	330.00	205.50	150.00	0.00	0.00	872.70	480.00
		Hired (in Rs.)	204.96	160.00	0.00	0.00	0.00	0.00	0.00	0.00	204.96	160.00
		Human Labour										
		Owned (in Rs.)	840.00	160.00	1,974.00	462.00	959.00	210.00	248.50	203.00	4,021.50	1,035.00
		Hired (in Rs.)	420.00	80.00	1,410.00	330.00	685.00	150.00	177.50	145.00	2,692.50	705.00
		Total	6,644.40	1,356.16	21,195.12	5,066.16	10,516.12	2,422.80	1,952.50	1,595.00	40,308.14	10,440.12
4	Plantation / sowing	Hired labour	1,380.46	262.94	13,271.20	3,106.03	9,722.21	2,128.95	2,651.85	2,166.30	27,025.71	7,664.22
		Family labour	5,647.32	1,075.68	11,164.66	2,613.01	2,046.78	448.20	265.19	216.63	19,123.95	4,353.52
		Total	7,027.78	1,338.62	24,435.86	5,719.03	11,768.99	2,577.15	2,917.04	2,382.93	46,149.66	12,017.74
5	Fertilizer	Quantity (in Qtl.)	2.10	0.37	10.15	2.38	5.48	1.14	1.63	1.33	19.37	5.22
		Value (in Rs.)	1,806.00	316.48	8,730.72	2,043.36	4,712.80	980.40	1,404.38	1,147.24	16,653.90	4,487.48
6	FYM	Quantity (in Qtl.)	22.59	3.39	82.16	18.73	32.75	7.17	8.49	6.72	145.98	36.02
		Value (in Rs.)	4,517.86	678.87	16,431.01	3,746.95	6,549.70	1,434.24	1,697.18	1,343.11	29,195.75	7,203.17
7	Bio-fertilizer	Quantity (in Qtl.)	3.14	0.60	11.38	2.66	6.14	1.34	1.59	1.30	22.24	5.90
		Value (in Rs.)	2,196.18	418.32	7,962.72	1,863.62	4,298.24	941.22	1,113.78	909.85	15,570.92	4,133.00
8	Micronutrient	Quantity (in kg)	13.10	2.40	56.40	13.20	34.25	7.56	13.14	11.02	116.89	34.18
		Value (in Rs.)	589.68	108.00	2,538.00	594.00	1,541.25	340.20	591.08	495.90	5,260.01	1,538.10
9	Insecticides/ presides	Quantity (in Lit.)	0.59	0.11	2.26	0.53	1.37	0.30	0.36	0.29	4.57	1.23
		Value (in Rs.)	441.00	84.00	1,692.00	396.00	1,027.50	225.00	266.25	217.50	3,426.75	922.50
10	Labour Charge (application of the items 5,6,7,8 &9)	Value (in Rs.)	453.60	86.40	1,861.20	435.60	1,082.30	237.00	280.45	229.10	3,677.55	988.10
11	Weeding Charges	(in Rs.)	168.00	32.00	676.80	158.40	383.60	84.00	99.40	81.20	1,327.80	355.60
12	Irrigation Charge	(in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Harvesting	Hired labour	1,254.96	0.00	6,319.62	1,479.06	3,888.88	851.58	1,007.70	823.19	12,471.17	3,153.83
		Family labour	1,882.44	597.60	4,213.08	986.04	1,432.75	313.74	371.26	303.28	7,899.53	2,200.66
		Total	3,137.40	597.60	10,532.70	2,465.10	5,321.63	1,165.32	1,378.96	1,126.48	20,370.69	5,354.50
14	Carrying charge from farm field to farm house	Manual	840.00	160.00	2,820.00	660.00	1,370.00	300.00	355.00	290.00	5,385.00	1,410.00
		Hired Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	840.00	160.00	2,820.00	660.00	1,370.00	300.00	355.00	290.00	5,385.00	1,410.00
15	Marketing expenditure	(in Rs.)	84.00	16.00	846.00	198.00	685.00	150.00	248.50	203.00	1,863.50	567.00
16	Estimated Annualised Value (10% on capital assets)	(in Rs.)	819.35	155.76	2,404.11	420.79	2,218.50	492.56	1,469.77	1,010.74	6,911.73	2,079.84
17	5% annual intt.	(in Rs.)	40.97	7.79	120.21	21.04	110.92	24.63	73.49	50.54	345.59	103.99
18	Sub Total	(in Rs.)	38,812.61	7,309.60	137,073.45	31,939.05	68,177.24	14,992.52	18,200.07	14,637.97	262,263.37	68,879.14
19	Managerial expenditure (12% of the total expenditure incurred)	(in Rs.)	4,657.51	877.15	16,448.81	3,832.69	8,181.27	1,799.10	2,184.01	1,756.56	31,471.60	8,265.50
20	Total Cost	(in Rs.)	43,470.13	8,186.75	153,522.26	35,771.73	76,358.51	16,791.62	20,384.08	16,394.53	293,734.98	77,144.64
21	**Cost Per Hectare**	**(in Rs.)**	**25,875.07**	**25,583.61**	**27,220.26**	**27,099.80**	**27,868.07**	**27,986.03**	**28,709.97**	**28,266.43**	**27,273.44**	**27,356.25**
22	**Gross Return Per Hectare**	**(in Rs.)**	**46,245.00**	**45,570.00**	**46,875.00**	**46,335.00**	**45,525.00**	**45,315.00**	**44,670.00**	**44,325.00**	**46,287.33**	**45,617.29**
23	**BCR**		**1.79**	**1.78**	**1.72**	**1.71**	**1.63**	**1.62**	**1.56**	**1.57**	**1.70**	**1.67**

Source: Primary data

Appendix-I (A.3)
Cost of cultivation of Jute (*Kharif*) (operation wise)

Sl.No.	Inputs		Marginal		Small		Medium		Large		Over all	
	Items	**Particulars**	**B**	**NB**	**B**	**NB**	**B**	**NB**	**B**	**NB**	**B**	**NB**
1	Area	(in Ha.)	2.80	0.51	4.84	2.20	4.39	0.70	0.92	0.68	12.95	4.09
2	Seed	Quantity (in kg)	33.47	6.10	57.85	26.29	52.47	8.37	11.00	8.13	145.10	48.88
		Value (in Rs.)	4,183.20	780.23	7,809.44	3,615.48	10,913.61	1,721.81	2,366.30	1,706.75	25,272.55	7,824.26
3	Land preparation	Tractor/ PT										
		Owned (in Rs.)	0.00	0.00	338.80	0.00	1,207.25	350.00	2,748.96	1,981.04	4,295.01	2,331.04
		Hired (in Rs.)	8,366.40	1,523.88	12,654.18	6,573.60	14,756.99	2,091.60	0.00	0.00	35,777.57	10,189.08
		Bollock Labour										
		Owned (in Rs.)	546.00	124.95	750.20	308.00	768.25	294.00	0.00	0.00	2,064.45	726.95
		Hired (in Rs.)	901.60	112.20	203.28	264.00	0.00	0.00	0.00	0.00	1,104.88	376.20
		Human Labour										
		Owned (in Rs.)	700.00	127.50	726.00	330.00	329.25	52.50	46.00	34.00	1,801.25	544.00
		Hired (in Rs.)	0.00	0.00	484.00	220.00	768.25	122.50	184.00	136.00	1,436.25	478.50
		Total	10,514.00	1,888.53	15,156.46	7,695.60	17,829.99	2,910.60	2,978.96	2,151.04	46,479.41	14,645.77
4	Plantation / sowing	Hired labour	418.32	76.19	1,446.19	657.36	1,639.67	261.45	412.34	304.78	3,916.52	1,299.78
		Family labour	1,045.80	190.49	1,084.64	493.02	655.87	104.58	68.72	50.80	2,855.03	838.88
		Total	1,464.12	266.68	2,530.84	1,150.38	2,295.53	366.03	481.07	355.57	6,771.56	2,138.66
5	Fertilizer	Quantity (in Qtl.)	1.12	0.20	2.08	0.95	2.11	0.34	0.46	0.34	5.77	1.83
		Value (in Rs.)	963.20	175.44	1,789.83	813.56	1,812.19	288.96	395.60	292.40	4,960.82	1,570.36
6	FYM	Quantity (in Qtl.)	1.68	0.31	2.90	1.32	2.63	0.42	0.55	0.41	7.77	2.45
		Value (in Rs.)	336.00	61.20	580.80	264.00	526.80	84.00	110.40	81.60	1,554.00	490.80
7	Bio-fertilizer	Quantity (in Qtl.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Value (in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Micronutrient	Quantity (in kg)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Value (in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Insecticides/ presides	Quantity (in Lit.)	0.28	0.05	0.73	0.33	0.66	0.11	0.14	0.10	1.80	0.59
		Value (in Rs.)	210.00	38.25	544.50	247.50	493.88	78.75	103.50	76.50	1,351.88	441.00
10	Labour Charge (application of the items 5,6,7,8 &9)	Value (in Rs.)	280.00	51.00	484.00	220.00	439.00	70.00	92.00	68.00	1,295.00	409.00
11	Weeding Charges	(in Rs.)	504.00	91.80	968.00	440.00	658.50	105.00	92.00	68.00	2,222.50	704.80
12	Irrigation Charge	(in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Harvesting & Processing	Hired labour	6,274.80	1,142.91	39,770.28	18,077.40	45,910.62	7,320.60	10,720.94	7,924.18	102,676.64	34,465.09
		Family labour	25,099.20	4,571.64	16,269.66	7,395.30	4,919.00	784.35	0.00	0.00	46,287.86	12,751.29
		Total	31,374.00	5,714.55	56,039.94	25,472.70	50,829.62	8,104.95	10,720.94	7,924.18	148,964.50	47,216.38
14	Carrying charge from farm field to farm house & Storing	Manual	1,260.00	229.50	1,064.80	484.00	658.50	105.00	92.00	68.00	3,075.30	886.50
		Hired Vehicle	420.00	76.50	1,355.20	616.00	1,975.50	315.00	386.40	285.60	4,137.10	1,293.10
		Total	1,680.00	306.00	2,420.00	1,100.00	2,634.00	420.00	478.40	353.60	7,212.40	2,179.60
15	Marketing expenditure	(in Rs.)	560.00	102.00	968.00	440.00	878.00	140.00	184.00	136.00	2,590.00	818.00
16	Estimated Annualised Value (10% on capital assets)	(in Rs.)	1,365.59	248.24	2,063.10	701.32	3,554.45	574.65	1,904.49	1,185.00	8,887.63	2,709.21
17	5% annual intt.	(in Rs.)	68.28	12.41	103.15	35.07	177.72	28.73	95.22	59.25	444.38	135.46
18	Sub Total	(in Rs.)	53,222.39	9,685.32	90,974.06	41,975.60	92,604.28	14,823.48	19,910.89	14,389.89	256,711.62	80,874.30
19	Managerial expenditure (12% of the total expenditure incurred)	(in Rs.)	6,386.69	1,162.24	10,916.89	5,037.07	11,112.51	1,778.82	2,389.31	1,726.79	30,805.39	9,704.92
20	Total Cost	(in Rs.)	59,609.07	10,847.56	101,890.95	47,012.67	103,716.80	16,602.30	22,300.20	16,116.68	287,517.02	90,579.21
21	**Cost Per Hectare**	**(in Rs.)**	**21,288.95**	**21,269.73**	**21,051.85**	**21,369.40**	**23,625.69**	**23,717.57**	**24,239.35**	**23,700.99**	**22,202.09**	**22,146.51**
22	**Gross Return Per Hectare**	**(in Rs.)**	**37,324.00**	**35,647.00**	**37,711.00**	**36,227.50**	**35,410.50**	**35,475.00**	**34,271.00**	**34,099.00**	**36,603.63**	**35,673.14**
23	**BCR**		**1.75**	**1.68**	**1.79**	**1.70**	**1.50**	**1.50**	**1.41**	**1.44**	**1.65**	**1.61**

Source: Primary data

Appendix-I (A.4)
Cost of cultivation of Sugercane (Kharif) (operation wise)

Sl.No.	Inputs		Marginal		Small		Medium		Large		Over all	
	Items	**Particulars**	**B**	**NB**	**B**	**NB**	**B**	**NB**	**B**	**NB**	**B**	**NB**
1	Area	(in Ha.)	0.56	0.12	4.03	0.44	1.32	0.20	0.20	0.19	6.11	0.95
2	Seedling	Quantity (in nos.)	16,688	3,577	120,296	13,132	39,415	5,971	5,973	5,675	182,372	28,355
		Value (in Rs.)	5,006.40	1,073.16	36,088.65	3,939.54	11,824.56	1,791.30	1,792.02	1,702.59	54,711.63	8,506.59
3	Land preparation	Tractor/ PT										
		Owned (in Rs.)	0.00	0.00	3,010.41	0.00	986.04	298.80	840.00	794.20	4,836.45	1,093.00
		Hired (in Rs.)	2,928.24	609.55	15,052.05	2,136.42	3,944.16	597.60	0.00	0.00	21,924.45	3,343.57
		Bollock Labour										
		Owned (in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Hired (in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Human Labour										
		Owned (in Rs.)	1,087.63	179.28	604.50	66.00	99.00	15.00	10.00	9.50	1,801.13	269.78
		Hired (in Rs.)	0.00	0.00	403.00	44.00	231.00	35.00	40.00	38.00	674.00	117.00
		Total	4,015.87	788.83	19,069.96	2,246.42	5,260.20	946.40	890.00	841.70	29,236.03	4,823.35
4	Transplantation	Hired labour	418.32	89.64	7,526.03	821.70	2,958.12	448.20	522.90	496.76	11,425.37	1,856.30
		Family labour	836.64	179.28	3,010.41	328.68	493.02	74.70	0.00	0.00	4,340.07	582.66
		Total	1,254.96	268.92	10,536.44	1,150.38	3,451.14	522.90	522.90	496.76	15,765.44	2,438.96
5	Fertilizer	Quantity (in Qtl.)	0.45	0.10	5.84	0.62	2.31	0.34	0.36	0.34	8.96	1.41
		Value (in Rs.)	385.28	87.72	5,025.41	537.33	1,986.60	292.40	309.60	294.12	7,706.89	1,211.57
6	FYM	Quantity (in Qtl.)	8.37	1.79	60.21	6.57	19.72	2.99	2.99	2.84	91.28	14.19
		Value (in Rs.)	1,673.28	358.56	12,041.64	1,314.72	3,944.16	597.60	597.60	567.72	18,256.68	2,838.60
7	Bio-fertilizer	Quantity (in Qtl.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Value (in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Micronutrient	Quantity (in kg)	3.56	0.76	25.59	2.79	8.38	1.27	1.27	1.21	38.80	6.03
		Value (in Rs.)	195.56	34.29	1,151.48	125.72	377.16	57.15	57.15	54.29	1,781.35	271.44
9	Insecticides/ presides	Quantity (in Lit.)	0.14	0.03	1.13	0.12	0.40	0.06	0.06	0.06	1.72	0.27
		Value (in Rs.)	105.00	22.50	846.30	92.40	297.00	45.00	45.00	42.75	1,293.30	202.65
10	Labour Charge (application of the items 5,6,7,8 &9)	Value (in Rs.)	140.00	30.00	1,209.00	132.00	495.00	75.00	76.00	72.20	1,920.00	309.20
11	Weeding Charges/ Intercultue	(in Rs.)	560.00	120.00	4,030.00	440.00	1,320.00	200.00	200.00	190.00	6,110.00	950.00
12	Irrigation Charge	(in Rs.)	196.00	42.00	1,410.50	154.00	462.00	70.00	70.00	66.50	2,138.50	332.50
13	Harvesting	Hired labour	209.16	44.82	9,031.23	986.04	3,944.16	582.66	672.30	638.69	13,856.85	2,252.21
		Family labour	1,464.12	358.56	4,515.62	493.02	493.02	89.64	0.00	0.00	6,472.76	941.22
		Total	1,673.28	403.38	13,546.85	1,479.06	4,437.18	672.30	672.30	638.69	20,329.61	3,193.43
	Crushing Charge	(in Rs.)	585.20	125.40	4,211.35	459.80	1,379.40	209.00	209.00	198.55	6,384.95	992.75
	Processing Charge (preparation of Gur)	(in Rs.)	420.00	90.00	3,022.50	330.00	990.00	150.00	150.00	142.50	4,582.50	712.50
	Storing (container etc.) Charge	Total	840.00	180.00	6,045.00	660.00	1,980.00	300.00	300.00	285.00	9,165.00	1,425.00
17	Marketing expenditure	(in Rs.)	196.00	42.00	1,410.50	154.00	462.00	70.00	70.00	66.50	2,138.50	332.50
18	Estimated Annualised Value (10% on capital assets)	(in Rs.)	273.12	58.41	1,717.83	140.26	1,068.76	164.19	414.02	331.10	3,473.73	693.96
19	5% annual intt.	(in Rs.)	13.66	2.92	85.89	7.01	53.44	8.21	20.70	16.56	173.69	34.70
20	Sub Total	(in Rs.)	17,393.61	3,698.09	120,240.29	13,230.64	39,293.60	6,096.44	6,320.29	5,935.32	183,247.79	28,960.49
21	Managerial expenditure (12% of the total expenditure incurred)	(in Rs.)	2,087.23	443.77	14,428.83	1,587.68	4,715.23	731.57	758.43	712.24	21,989.73	3,475.26
22	Total Cost	(in Rs.)	19,480.84	4,141.86	134,669.13	14,818.32	44,008.84	6,828.01	7,078.72	6,647.55	205,237.53	32,435.75
23	**Cost Per Hectare**	**(in Rs.)**	**34,787.22**	**34,515.49**	**33,416.66**	**33,678.00**	**33,340.03**	**34,140.07**	**35,393.60**	**34,987.13**	**33,590.43**	**34,142.89**
24	**Gross Return Per Hectare**	**(in Rs.)**	**44,209.33**	**42,395.61**	**48,743.62**	**47,610.05**	**43,529.18**	**43,075.76**	**42,168.90**	**41,942.18**	**46,984.53**	**44,846.91**
25	**BCR**		**1.27**	**1.23**	**1.46**	**1.41**	**1.31**	**1.26**	**1.19**	**1.20**	**1.40**	**1.31**

Source: Primary data

Appendix-I (A.5)
Cost of cultivation of Paddy (*Rabi*) (operation wise)

Sl.No.	Inputs		Marginal		Small		Medium		Large		Over all	
	Items	**Particulars**	**B**	**NB**	**B**	**NB**	**B**	**NB**	**B**	**NB**	**B**	**NB**
1	Area	(in Ha.)	16.83	3.86	48.35	12.73	38.42	5.96	5.09	4.84	108.69	27.39
2	Seed	Quantity (in kg)	605.88	138.96	1,450.50	381.90	960.50	149.00	183.24	174.24	3,200.12	844.10
		Value (in Rs.)	33,323.40	7,642.80	79,777.50	21,004.50	52,827.50	8,195.00	10,078.20	9,583.20	176,006.60	46,425.50
3	Land preparation	Tractor/ PT										
		Owned (in Rs.)	0.00	0.00	3,868.00	0.00	71,749.35	11,130.30	26,235.39	24,766.04	101,852.74	35,896.34
		Hired (in Rs.)	100,576.08	23,067.36	325,057.05	90,338.45	172,198.44	26,712.72	0.00	0.00	597,831.57	140,118.53
		Bollock Labour										
		Owned (in Rs.)	6,286.01	1,441.71	19,864.60	1,782.20	15,784.86	2,448.67	0.00	0.00	41,935.46	5,672.58
		Hired (in Rs.)	31,430.03	7,208.55	15,169.33	1,527.60	0.00	0.00	0.00	0.00	46,599.35	8,736.15
		Human Labour										
		Owned (in Rs.)	4,207.50	965.00	7,252.50	1,909.50	2,881.50	447.00	254.50	242.00	14,596.00	3,563.50
		Hired (in Rs.)	0.00	0.00	4,835.00	1,273.00	6,723.50	1,043.00	1,018.00	968.00	12,576.50	3,284.00
		Total	142,499.61	32,682.62	376,046.48	96,830.75	269,337.65	41,781.69	27,507.89	25,976.04	815,391.62	197,271.09
4	Plantation / sowing	Hired labour	12,572.01	2,883.42	108,352.35	28,527.93	132,018.80	20,479.75	19,771.60	18,800.50	272,714.76	70,691.60
		Family labour	56,574.05	12,975.39	90,293.63	23,773.28	28,699.74	4,452.12	1,901.12	1,807.74	177,468.53	43,008.53
		Total	69,146.06	15,858.81	198,645.98	52,301.21	160,718.54	24,931.87	21,672.71	20,608.24	450,183.29	113,700.12
5	Fertilizer	Quantity (in Qtl.)	25.14	5.77	90.29	23.77	77.49	12.02	11.41	10.85	204.33	52.41
		Value (in Rs.)	21,623.86	4,959.48	77,652.52	20,445.02	66,640.80	10,337.82	9,809.75	9,327.94	175,726.92	45,070.26
6	FYM	Quantity (in Qtl.)	188.58	40.37	559.82	152.15	459.20	71.23	60.08	56.04	1,267.67	319.79
		Value (in Rs.)	37,716.03	8,073.58	111,964.10	30,429.79	91,839.17	14,246.78	12,015.05	11,207.99	253,534.34	63,958.14
7	Bio-fertilizer	Quantity (in Qtl.)	69.15	14.42	227.54	57.06	186.55	27.60	22.81	21.69	506.05	120.77
		Value (in Rs.)	48,402.24	10,091.97	159,277.95	39,939.10	130,583.82	19,322.20	15,969.37	15,185.02	354,233.38	84,538.29
8	Micronutrient	Quantity (in kg)	131.27	28.95	483.50	127.30	480.25	75.10	94.17	91.96	1,189.19	323.31
		Value (in Rs.)	11,814.66	2,605.50	43,515.00	11,457.00	43,222.50	6,758.64	8,474.85	8,276.40	107,027.01	29,097.54
9	Insecticides/ presides	Quantity (in Lit.)	25.14	5.77	90.29	23.77	71.75	11.13	9.51	9.04	196.69	49.71
		Value (in Rs.)	18,858.02	4,325.13	76,749.58	20,207.28	52,018.28	8,069.47	8,079.74	7,682.90	155,705.61	40,284.78
10	Labour Charge (application of the items 5,6,7,8 &9)	Value (in Rs.)	6,732.00	1,544.00	19,340.00	5,092.00	15,368.00	2,384.00	2,036.00	1,936.00	43,476.00	10,956.00
11	Weeding Charges	(in Rs.)	8,415.00	1,930.00	24,175.00	6,365.00	19,210.00	2,980.00	2,545.00	2,420.00	54,345.00	13,695.00
12	Irrigation Charge	(in Rs.)	3,702.60	849.20	10,637.00	2,800.60	8,452.40	1,311.20	1,119.80	1,064.80	23,911.80	6,025.80
13	Harvesting	Hired labour	6,286.01	1,441.71	108,352.35	28,527.93	114,798.96	17,363.27	17,110.04	16,269.66	246,547.35	63,602.57
		Family labour	50,288.04	11,533.68	54,176.18	14,263.97	14,349.87	2,671.27	0.00	0.00	118,814.09	28,468.92
		Total	56,574.05	12,975.39	162,528.53	42,791.90	129,148.83	20,034.54	17,110.04	16,269.66	365,361.44	92,071.49
14	Carrying charge from farm field to farm house	Manual	10,098.00	2,316.00	19,581.75	5,155.65	11,526.00	1,788.00	1,018.00	968.00	42,223.75	10,227.65
		Hired Vehicle	2,524.50	579.00	16,680.75	4,391.85	17,289.00	2,682.00	2,799.50	2,662.00	39,293.75	10,314.85
		Total	12,622.50	2,895.00	36,262.50	9,547.50	28,815.00	4,470.00	3,817.50	3,630.00	81,517.50	20,542.50
15	Threshing Charge	Manually	8,415.00	1,930.00	16,922.50	4,455.50	7,684.00	1,192.00	1,018.00	968.00	34,039.50	8,545.50
		Mechanically	15,147.00	3,474.00	55,602.50	14,639.50	49,946.00	7,748.00	6,362.50	6,050.00	127,058.00	31,911.50
		Total	25,245.00	5,790.00	72,525.00	19,095.00	57,630.00	8,940.00	7,635.00	7,260.00	163,035.00	41,085.00
16	Winning & Storing	Hired labour	2,524.50	579.00	12,087.50	3,182.50	13,447.00	2,086.00	2,290.50	2,178.00	30,349.50	8,025.50
		Family labour	6,732.00	1,544.00	14,505.00	3,819.00	7,684.00	1,192.00	509.00	484.00	29,430.00	7,039.00
		Total	9,256.50	2,123.00	26,592.50	7,001.50	21,131.00	3,278.00	2,799.50	2,662.00	59,779.50	15,064.50
17	Marketing expenditure	(in Rs.)	841.50	193.00	7,252.50	1,909.50	9,605.00	1,490.00	1,781.50	1,694.00	19,480.50	5,286.50
18	Estimated Annualised Value (10% on capital assets)	(in Rs.)	8,208.16	1,878.82	20,609.67	4,058.07	31,107.52	4,892.74	10,536.81	8,434.43	70,462.16	19,264.05
19	5% annual intt.	(in Rs.)	410.41	93.94	1,030.48	202.90	1,555.38	244.64	526.84	421.72	3,523.11	963.20
20	Sub Total	(in Rs.)	508,659.58	114,968.24	1,485,242.28	386,386.61	1,173,843.38	181,284.59	161,479.54	151,704.32	3,329,224.77	834,343.76
21	Managerial expenditure (12% of the total expenditure incurred)	(in Rs.)	61,039.15	13,796.19	178,229.07	46,366.39	140,861.21	21,754.15	19,377.54	18,204.52	399,506.97	100,121.25
22	Total Cost	(in Rs.)	569,698.73	128,764.42	1,663,471.35	432,753.01	1,314,704.58	203,038.74	180,857.08	169,908.84	3,728,731.75	934,465.01
23	**Cost Per Hectare**	**(in Rs.)**	**33,850.19**	**33,358.66**	**34,404.78**	**33,994.74**	**34,219.28**	**34,066.90**	**35,531.84**	**35,105.13**	**34,306.12**	**34,117.01**
24	**Gross Return Per Hectare**	**(in Rs.)**	**59,400.00**	**56,220.00**	**60,912.00**	**57,900.00**	**58,380.00**	**55,320.00**	**55,020.00**	**51,756.00**	**59,507.10**	**56,016.89**
25	**BCR**		**1.75**	**1.69**	**1.77**	**1.70**	**1.71**	**1.62**	**1.55**	**1.47**	**1.73**	**1.64**

Source: Primary data

Appendix-I (A.6)
Cost of cultivation of Pulses (*Rabi*) (operation wise)

Sl.No.	Inputs		Marginal		Small		Medium		Large		Over all	
	Items	**Particulars**	**B**	**NB**	**B**	**NB**	**B**	**NB**	**B**	**NB**	**B**	**NB**
1	Area	(in Ha.)	1.68	0.32	4.84	0.88	2.20	0.70	0.71	0.77	9.43	2.67
2	Seed	Quantity (in kg)	18.82	3.59	54.23	9.86	24.65	7.84	7.96	8.63	105.66	29.92
		Value (in Rs.)	1,411.83	268.92	4,067.42	739.53	1,848.83	588.26	596.67	647.09	7,924.74	2,243.80
3	Land preparation	Tractor/ PT										
		Owned (in Rs.)	0.00	0.00	723.10	0.00	575.19	392.18	2,386.67	2,588.36	3,684.95	2,980.53
		Hired (in Rs.)	6,274.80	1,195.20	21,692.88	4,272.84	8,217.00	2,875.95	0.00	0.00	36,184.68	8,343.99
		Bollock Labour										
		Owned (in Rs.)	1,254.96	239.04	1,807.74	164.34	1,643.40	522.90	0.00	0.00	4,706.10	926.28
		Hired (in Rs.)	2,509.92	478.08	3,615.48	110.00	0.00	0.00	0.00	0.00	6,125.40	588.08
		Human Labour										
		Owned (in Rs.)	400.00	80.00	700.00	100.00	150.00	100.00	50.00	50.00	1,300.00	330.00
		Hired (in Rs.)	0.00	0.00	400.00	100.00	200.00	100.00	160.00	150.00	760.00	350.00
		Total	10,439.68	1,992.32	28,939.20	4,747.18	10,785.59	3,991.03	2,596.67	2,788.36	52,761.13	13,518.88
4	Plantation / sowing	Hired labour	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Family labour	627.48	119.52	1,807.74	328.68	821.70	261.45	265.19	287.60	3,522.11	997.25
		Total	627.48	119.52	1,807.74	328.68	821.70	261.45	265.19	287.60	3,522.11	997.25
5	Fertilizer	Quantity (in Qtl.)	6.27	1.20	18.08	3.29	8.22	2.61	2.65	2.88	35.22	9.97
		Value (in Rs.)	5,396.33	1,027.87	15,546.56	2,826.65	7,066.62	2,248.47	2,280.59	2,473.32	30,290.10	8,576.31
6	FYM	Quantity (in Qtl.)	6.27	1.20	18.08	3.29	8.22	2.61	2.65	2.88	35.22	9.97
		Value (in Rs.)	1,254.96	239.04	3,615.48	657.36	1,643.40	522.90	530.37	575.19	7,044.21	1,994.49
7	Bio-fertilizer	Quantity (in Qtl.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Value (in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Micronutrient	Quantity (in kg)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Value (in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Insecticides/ presides	Quantity (in Lit.)	0.17	0.03	0.48	0.09	0.22	0.07	0.07	0.08	0.94	0.27
		Value (in Rs.)	126.00	24.00	363.00	66.00	165.00	52.50	53.25	57.75	707.25	200.25
10	Labour Charge (application of the items 5,6,7,8 &9)	Value (in Rs.)	201.60	38.40	580.80	105.60	264.00	84.00	85.20	92.40	1,131.60	320.40
11	Weeding Charges	(in Rs.)	588.00	112.00	1,694.00	308.00	770.00	245.00	248.50	269.50	3,300.50	934.50
12	Irrigation Charge	(in Rs.)	878.47	167.33	2,530.84	460.15	1,150.38	366.03	371.26	402.63	4,930.95	1,396.14
13	Harvesting	Hired labour	627.48	119.52	5,423.22	986.04	3,286.80	1,045.80	1,325.93	1,437.98	10,663.43	3,589.34
		Family labour	2,509.92	478.08	3,615.48	657.36	821.70	261.45	0.00	0.00	6,947.10	1,396.89
		Total	3,137.40	597.60	9,038.70	1,643.40	4,108.50	1,307.25	1,325.93	1,437.98	17,610.53	4,986.23
14	Carrying charge from farm field to farm house	Manual	504.00	96.00	1,452.00	264.00	660.00	210.00	213.00	231.00	2,829.00	801.00
		Hired Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	504.00	96.00	1,452.00	264.00	660.00	210.00	213.00	231.00	2,829.00	801.00
15	Threshing Charge	Manually	1,008.00	192.00	1,452.00	264.00	440.00	140.00	0.00	0.00	2,900.00	596.00
		Mechanically	0.00	0.00	1,694.00	308.00	990.00	315.00	355.00	385.00	3,039.00	1,008.00
		Total	2,520.00	480.00	7,260.00	1,320.00	3,300.00	1,050.00	1,065.00	1,155.00	14,145.00	4,005.00
16	Winning & Storing	Hired labour	252.00	48.00	1,210.00	220.00	550.00	175.00	248.50	269.50	2,260.50	712.50
		Family labour	336.00	64.00	968.00	176.00	220.00	70.00	0.00	0.00	1,524.00	310.00
		Total	588.00	112.00	2,178.00	396.00	770.00	245.00	248.50	269.50	3,784.50	1,022.50
17	Marketing expenditure	(in Rs.)	126.00	24.00	363.00	66.00	165.00	52.50	53.25	57.75	707.25	200.25
18	Estimated Annualised Value (10% on capital assets)	(in Rs.)	819.35	155.76	2,063.10	280.53	1,781.27	574.65	1,469.77	1,341.84	6,133.50	2,352.77
19	5% annual intt.	(in Rs.)	40.97	7.79	103.15	14.03	89.06	28.73	73.49	67.09	306.67	117.64
20	Sub Total	(in Rs.)	28,458.47	5,424.14	81,022.18	14,117.50	35,125.35	11,743.77	11,391.42	12,061.59	155,997.43	43,347.00
21	Managerial expenditure (12% of the total expenditure incurred)	(in Rs.)	3,415.02	650.90	9,722.66	1,694.10	4,215.04	1,409.25	1,366.97	1,447.39	18,719.69	5,201.64
22	Total Cost	(in Rs.)	31,873.49	6,075.04	90,744.85	15,811.60	39,340.40	13,153.02	12,758.39	13,508.98	174,717.12	48,548.65
23	**Cost Per Hectare**	**(in Rs.)**	**18,972.31**	**18,984.51**	**18,748.94**	**17,967.73**	**17,882.00**	**18,790.03**	**17,969.57**	**17,544.13**	**18,527.80**	**18,183.01**
24	**Gross Return Per Hectare**	**(in Rs.)**	**27,855.00**	**26,325.00**	**28,350.00**	**26,910.00**	**26,910.00**	**25,920.00**	**25,425.00**	**24,975.00**	**27,705.22**	**26,020.53**
25	**BCR**		**1.47**	**1.39**	**1.51**	**1.50**	**1.50**	**1.38**	**1.41**	**1.42**	**1.50**	**1.43**

Source: Primary data

Appendix-I (A.7)
Cost of cultivation of Vegetables (*Rabi)* (operation wise)

Sl.No.	Inputs		Marginal		Small		Medium		Large		Over all	
	Items	Particulars	B	NB	B	NB	B	NB	B	NB	B	NB
1	Area	(in Ha.)	3.37	0.71	11.28	3.29	8.78	1.69	1.73	1.45	25.16	7.14
2	Seed/ Seedling	Quantity (in kg)	42.13	9.05	146.75	42.80	113.26	21.72	22.58	18.92	324.72	92.49
		Value (in Rs.)	33,700.00	7,242.00	117,402.24	34,242.32	90,609.60	17,373.20	18,061.20	15,138.00	259,773.04	73,995.52
3	Land preparation	Tractor/ PT										
		Owned (in Rs.)	0.00	0.00	902.40	0.00	1,536.50	338.00	3,719.50	3,117.50	6,158.40	3,455.50
		Hired (in Rs.)	10,069.56	2,121.48	33,704.64	9,830.52	26,234.64	5,049.72	0.00	0.00	70,008.84	17,001.72
		Bollock Labour										
		Owned (in Rs.)	320.15	0.00	1,015.20	822.50	658.50	422.50	0.00	0.00	1,993.85	1,245.00
		Hired (in Rs.)	411.14	355.00	0.00	0.00	0.00	0.00	0.00	0.00	411.14	355.00
		Human Labour										
		Owned (in Rs.)	1,685.00	355.00	3,948.00	1,151.50	3,073.00	591.50	605.50	507.50	9,311.50	2,605.50
		Hired (in Rs.)	842.50	177.50	2,820.00	822.50	2,195.00	422.50	432.50	362.50	6,290.00	1,785.00
		Total	13,328.35	3,008.98	42,390.24	12,627.02	33,697.64	6,824.22	4,757.50	3,987.50	94,173.73	26,447.72
4	Plantation / sowing	Hired labour	2,769.13	583.41	26,542.40	7,741.53	31,153.64	5,996.54	6,461.55	5,415.75	66,926.72	19,737.23
		Family labour	11,328.26	2,386.67	22,329.32	6,512.72	6,558.66	1,262.43	646.16	541.58	40,862.39	10,703.39
		Total	14,097.38	2,970.07	48,871.73	14,254.25	37,712.30	7,258.97	7,107.71	5,957.33	107,789.11	30,440.62
5	Fertilizer	Quantity (in Qtl.)	4.21	0.82	20.30	5.92	17.56	3.21	3.98	3.34	46.06	13.28
		Value (in Rs.)	3,622.75	702.19	17,461.44	5,092.92	15,101.60	2,761.46	3,421.94	2,868.10	39,607.73	11,424.67
6	FYM	Quantity (in Qtl.)	45.31	7.53	164.31	46.69	104.94	20.20	20.68	16.79	335.24	91.21
		Value (in Rs.)	9,062.60	1,506.25	32,862.02	9,338.99	20,987.71	4,039.78	4,135.39	3,357.77	67,047.73	18,242.79
7	Bio-fertilizer	Quantity (in Qtl.)	6.29	1.33	22.75	6.64	19.68	3.79	3.88	3.25	52.60	15.00
		Value (in Rs.)	4,405.43	928.15	15,925.44	4,644.92	13,773.19	2,651.10	2,713.85	2,274.62	36,817.91	10,498.79
8	Micronutrient	Quantity (in kg)	26.29	5.33	112.80	32.90	109.75	21.29	32.01	27.55	280.84	87.07
		Value (in Rs.)	1,182.87	239.63	5,076.00	1,480.50	4,938.75	958.23	1,440.23	1,239.75	12,637.85	3,918.11
9	Insecticides/ presides	Quantity (in Lit.)	1.18	0.25	4.51	1.32	4.39	0.85	0.87	0.73	10.95	3.13
		Value (in Rs.)	884.63	186.38	3,384.00	987.00	3,292.50	633.75	648.75	543.75	8,209.88	2,350.88
10	Labour Charge (application of the items 5,6,7,8 &9)	Value (in Rs.)	909.90	191.70	3,722.40	1,085.70	3,468.10	667.55	683.35	572.75	8,783.75	2,517.70
11	Weeding Charges	(in Rs.)	337.00	71.00	1,353.60	394.80	1,229.20	236.60	242.20	203.00	3,162.00	905.40
12	Irrigation Charge	(in Rs.)	1,179.50	248.50	3,948.00	1,151.50	3,073.00	591.50	605.50	507.50	8,806.00	2,499.00
13	Harvesting	Hired labour	2,517.39	0.00	12,639.24	3,686.45	12,461.45	2,398.62	2,455.39	2,057.99	30,073.47	8,143.05
		Family labour	3,776.09	1,325.93	8,426.16	2,457.63	4,591.06	883.70	904.62	758.21	17,697.92	5,425.46
		Total	6,293.48	1,325.93	21,065.40	6,144.08	17,052.52	3,282.32	3,360.01	2,816.19	47,771.40	13,568.51
14	Carrying charge from farm field to farm house	Manual	1,685.00	355.00	5,640.00	1,645.00	4,390.00	845.00	865.00	725.00	12,580.00	3,570.00
		Hired Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	1,685.00	355.00	5,640.00	1,645.00	4,390.00	845.00	865.00	725.00	12,580.00	3,570.00
15	Marketing expenditure	(in Rs.)	168.50	35.50	1,692.00	493.50	2,195.00	422.50	605.50	507.50	4,661.00	1,459.00
16	Estimated Annualised Value (10% on capital assets)	(in Rs.)	1,643.58	345.59	4,808.21	1,048.79	7,108.90	1,387.37	3,581.27	2,526.84	17,141.97	5,308.59
17	5% annual intt.	(in Rs.)	82.18	17.28	240.41	52.44	355.45	69.37	179.06	126.34	857.10	265.43
18	Sub Total	(in Rs.)	91,673.25	19,182.43	322,120.74	93,598.03	255,517.35	49,335.37	51,725.11	42,779.18	721,036.44	204,895.01
19	Managerial expenditure (12% of the total expenditure incurred)	(in Rs.)	11,000.79	2,301.89	38,654.49	11,231.76	30,662.08	5,920.24	6,207.01	5,133.50	86,524.37	24,587.40
20	Total Cost	(in Rs.)	102,674.04	21,484.32	360,775.23	104,829.79	286,179.43	55,255.61	57,932.12	47,912.68	807,560.82	229,482.41
21	**Cost Per Hectare**	**(in Rs.)**	**30,467.07**	**30,259.61**	**31,983.62**	**31,863.16**	**32,594.47**	**32,695.63**	**33,486.77**	**33,043.23**	**32,097.01**	**32,140.39**
22	**Gross Return Per Hectare**	**(in Rs.)**	**47,062.50**	**44,537.50**	**47,675.00**	**46,150.00**	**45,887.50**	**44,437.50**	**42,862.50**	**42,412.50**	**46,638.31**	**44,825.76**
23	**BCR**		**1.54**	**1.47**	**1.49**	**1.45**	**1.41**	**1.36**	**1.28**	**1.28**	**1.45**	**1.39**

Source: Primary data

Appendix-I (A.8)
Cost of cultivation of Oilseeds/Mustard (*Rabi*) (operation wise)

Sl. No.	Inputs		Marginal		Small		Medium		Large		Over all	
	Items	Particulars	B	NB	B	NB	B	NB	B	NB	B	NB
1	Area	(in Ha.)	1.96	0.45	7.25	1.76	4.94	0.70	1.32	1.16	15.47	4.07
2	Seed	Quantity (in kg)	21.96	5.04	81.24	19.72	55.35	7.84	14.79	13.00	173.34	45.60
		Value (in Rs.)	1,098.09	252.11	4,061.81	986.04	2,767.64	392.18	739.53	649.89	8,667.07	2,280.22
3	Land preparation	Tractor/ PT										
		Owned (in Rs.)	0.00	0.00	580.00	0.00	1,845.09	261.45	3,451.14	3,041.49	5,876.23	3,302.94
		Hired (in Rs.)	5,124.42	1,176.53	21,663.00	5,258.88	12,915.63	1,830.15	0.00	0.00	39,703.05	8,265.56
		Bollock Labour										
		Owned (in Rs.)	392.00	110.25	1,087.50	246.40	864.50	294.00	0.00	0.00	2,344.00	650.65
		Hired (in Rs.)	686.00	99.00	290.00	211.20	0.00	0.00	0.00	0.00	976.00	310.20
		Human Labour										
		Owned (in Rs.)	294.00	67.50	725.00	176.00	247.00	35.00	52.80	46.40	1,318.80	324.90
		Hired (in Rs.)	0.00	0.00	362.50	88.00	494.00	70.00	158.40	139.20	1,014.90	297.20
		Total	6,496.42	1,453.28	24,708.00	5,980.48	16,366.22	2,490.60	3,662.34	3,227.09	51,232.98	13,151.44
4	Plantation / sowing	Hired labour	588.00	135.00	1,450.00	352.00	494.00	70.00	99.00	87.00	2,631.00	644.00
		Family labour	0.00	0.00	725.00	176.00	988.00	140.00	330.00	290.00	2,043.00	606.00
		Total	588.00	135.00	2,175.00	528.00	1,482.00	210.00	429.00	377.00	4,674.00	1,250.00
5	Fertilizer	Quantity (in Qtl.)	1.93	0.44	8.02	1.95	6.20	0.88	1.82	1.60	17.97	4.87
		Value (in Rs.)	1,662.07	381.60	6,893.17	1,673.38	5,331.57	755.49	1,568.79	1,378.63	15,455.60	4,189.09
6	FYM	Quantity (in Qtl.)	10.98	2.52	43.33	10.52	31.37	4.44	6.90	6.07	92.58	23.55
		Value (in Rs.)	2,196.18	504.23	8,665.20	2,103.55	6,273.31	888.93	1,380.46	1,213.13	18,515.14	4,709.84
7	Bio-fertilizer	Quantity (in Qtl.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Value (in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Micronutrient	Quantity (in Qtl.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Value (in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Insecticides/ presides	Quantity (in Lit.)	1.76	0.41	6.53	1.58	4.45	0.63	1.19	1.04	13.92	3.66
		Value (in Rs.)	441.00	101.25	1,631.25	396.00	1,111.50	157.50	297.00	261.00	3,480.75	915.75
10	Labour Charge (application of the items 5,6,7,8 &9)	Value (in Rs.)	196.00	45.00	725.00	176.00	494.00	70.00	132.00	116.00	1,547.00	407.00
11	Weeding Charges	(in Rs.)	294.00	67.50	1,087.50	264.00	741.00	105.00	132.00	116.00	2,254.50	552.50
12	Irrigation Charge	(in Rs.)	363.78	83.52	1,395.63	338.80	1,028.51	145.74	290.40	255.20	3,078.31	823.26
13	Harvesting	Hired labour	292.82	67.23	5,415.75	1,314.72	4,797.23	679.77	1,577.66	1,386.43	12,083.47	3,448.15
		Family labour	1,903.36	437.00	2,707.88	657.36	922.55	130.73	0.00	0.00	5,533.78	1,225.08
		Total	2,196.18	504.23	8,123.63	1,972.08	5,719.78	810.50	1,577.66	1,386.43	17,617.25	4,673.23
14	Carrying charge from farm field to farm house	Manual	294.00	67.50	1,160.00	281.60	889.20	126.00	264.00	232.00	2,607.20	707.10
		Hired Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	294.00	67.50	1,160.00	281.60	889.20	126.00	264.00	232.00	2,607.20	707.10
15	Threshing Charge	Manually	980.00	225.00	3,625.00	880.00	2,470.00	350.00	660.00	580.00	7,735.00	2,035.00
		Mechanically	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total	980.00	225.00	3,625.00	880.00	2,470.00	350.00	660.00	580.00	7,735.00	2,035.00
16	Winning & Storing	Hired labour	98.00	22.50	507.50	123.20	494.00	70.00	158.40	139.20	1,257.90	354.90
		Family labour	196.00	45.00	652.50	158.40	345.80	49.00	66.00	58.00	1,260.30	310.40
		Total	294.00	67.50	1,160.00	281.60	839.80	119.00	224.40	197.20	2,518.20	665.30
17	Marketing expenditure	(in Rs.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	Estimated Annualised Value (10% on capital assets)	(in Rs.)	955.91	219.03	3,090.39	561.05	3,999.77	574.65	2,732.53	2,021.47	10,778.60	3,376.21
19	5% annual intt.	(in Rs.)	47.80	10.95	154.52	28.05	199.99	28.73	136.63	101.07	538.93	168.81
20	Sub Total	(in Rs.)	17,907.42	4,072.69	67,931.08	16,274.63	49,220.28	7,154.31	14,094.74	11,996.12	149,153.52	39,497.75
21	Managerial expenditure (12% of the total expenditure incurred)	(in Rs.)	2,148.89	488.72	8,151.73	1,952.96	5,906.43	858.52	1,691.37	1,439.53	17,898.42	4,739.73
22	Total Cost	(in Rs.)	20,056.31	4,561.41	76,082.81	18,227.59	55,126.71	8,012.83	15,786.11	13,435.65	167,051.94	44,237.48
23	**Cost Per Hectare**	**(in Rs.)**	**10,232.81**	**10,136.47**	**10,494.18**	**10,356.58**	**11,159.25**	**11,446.90**	**11,959.17**	**11,582.46**	**10,798.45**	**10,869.16**
24	**Gross Return Per Hectare**	**(in Rs.)**	**18,450.00**	**18,150.00**	**18,690.00**	**17,850.00**	**18,240.00**	**17,640.00**	**17,610.00**	**17,220.00**	**18,423.66**	**17,667.26**
25	**BCR**		**1.80**	**1.79**	**1.78**	**1.72**	**1.63**	**1.54**	**1.47**	**1.49**	**1.71**	**1.63**

Source: Primary data

Appendix-II

Revised guidelines of KCC Scheme

1. Introduction

Revised guidelines were introduced by the Reserve Bank of India in 2012.The KCC has emerged as an innovative credit delivery mechanism to meet the production credit requirements of the farmers in a timely and hassle free manner. The scheme is under implementation in the entire country by the vast credit frame work involving Commercial Banks, RRBs and Cooperative and has received wide acceptability amongst bankers and farmers. However, during the last 13 years of implementation, many impediments were encountered by policy makers, implementing banks and the farmers in the implementation of the scheme. Recommendations of various committees appointed by the GOI and studies conducted by the NABARD also corroborate this fact. It was, therefore felt necessary to revisit the existing KCC Scheme to make it truly simple and hassle free for both the farmers and bankers. Accordingly, the GOI, Ministry of Finance constituted a Working Group to review the KCC Scheme. Based on the recommendations of the Working Group which were accepted by the GOI, the following guidelines are issued.

2. Applicability of the Scheme

The Revised KCC Scheme detailed in the ensuing paragraphs is to be implemented by Commercial Banks, RRBs, and Cooperatives. The scheme provides broad guidelines to the banks for operationalising the KCC scheme. Implementing banks will have the discretion to adopt the same to suit institution/location specific requirements.

3. Objectives/Purpose

Kisan Credit Card Scheme aims at providing adequate and timely credit support from the banking system under a single window to the farmers for their cultivation & other needs as indicated below:

a. To meet the short term credit requirements for cultivation of crops
b. Post harvest expenses
c. Produce Marketing loan
d. Consumption requirements of farmer household
e. Working capital for maintenance of farm assets and activities allied to agriculture, like dairy animals, inland fishery etc.
f. Investment & credit requirement for agriculture and allied activities like pump sets, sprayers, dairy animals etc.

Note: The aggregate of components a. to e. above will form the short term credit limit portion and the aggregate of components under f will form the long term credit limit portion..

4. Eligibility

i. All Farmers – Individuals / Joint borrowers who are owner cultivators

ii. Tenant Farmers, Oral Lessees & Share Croppers

iii. SHGs or Joint Liability Groups of Farmers including tenant farmers, share croppers etc.

5. Fixation of credit limit/Loan amount

The credit limit under the Kisan Credit Card may be fixed as under:

5.1. All farmers other than marginal farmers

5.1.1. The short term limit to be arrived for the first year

For farmers raising single crop in a year: Scale of finance for the crop (as decided by District Level Technical Committee) x Extent of area cultivated + 10% of limit towards post-harvest / household / consumption requirements + 20% of limit towards repairs and maintenance expenses of farm assets + crop insurance, PAIS (Personal Accident Insurance Scheme) & asset insurance.

5.1.2. Limit for second & subsequent year

First year limit for crop cultivation purpose arrived at as above plus 10% of the limit towards cost escalation / increase in scale of finance for every successive year (2nd , 3rd, 4th and 5th year) and estimated Term loan component for the tenure of Kisan Credit Card, i.e., five years. (Illustration I)

5.1.3. For farmers raising more than one crop in a year

The limit is to be fixed as above depending upon the crops cultivated as per proposed cropping pattern for the first year and an additional 10% of the limit towards cost escalation / increase in scale of finance for every successive year (2nd, 3rd, 4th and 5th year). It is assumed that the farmer adopts the same cropping pattern for the remaining four years also. In case the cropping pattern adopted by the farmer is changed in the subsequent year, the limit may be reworked. (Illustration I)

5.1.4. Term loans

Term loans for investments towards land development, minor irrigation, purchase of farm equipments and allied agricultural activities, the banks may fix the quantum of credit for term and working capital limit for agricultural and allied activities, etc., based on the unit cost of the asset/s proposed to be acquired by the

farmer, the allied activities already being undertaken on the farm, the bank's judgment on repayment capacity vis-a-vis total loan burden devolving on the farmer, including existing loan obligations.

5.1.5. The long term loan limit

It is based on the proposed investments during the five year period and the bank's perception on the repaying capacity of the farmer.

5.1.6. Maximum Permissible Limit:

The short term loan limit arrived for the 5th year plus the estimated long term loan requirement will be the Maximum Permissible Limit (MPL) and treated as the Kisan Credit Card Limit.

5.1.7. Fixation of Sub-limits for other than Marginal Farmers

i. Short term loans and term loans are governed by different interest rates. Besides, at present, short term crop loans are covered under Interest Subvention Scheme/ Prompt Repayment Incentive scheme. Further, repayment schedule and norms are different for short term and term loans. Hence, in order to have operational and accounting convenience, the card limit is to be bifurcated into separate sub limits for short term cash credit limit cum savings account and term loans.

ii. Drawing limit for short term cash credit should be fixed based on the cropping pattern and the amounts for crop production, repairs and maintenance of farm assets and consumption may be allowed to be drawn as per the convenience of the farmer. In case the revision of scale of finance for any year by the district level committee exceeds the notional hike of 10% contemplated while fixing the five year limit, a revised drawable limit may be fixed and the farmer be advised about the same. In case such revisions require the card limit itself to be enhanced (4th or 5th year), the same may be done and the farmer be so advised. For term loans, installments may be allowed to be withdrawn based on the nature of investment and repayment schedule drawn as per the economic life of the proposed investments. It is to be ensured that at any point of time the total liability should be within the drawing limit of the concerned year.

iii. Wherever the card limit/liability so arrived warrants additional security, the banks may take suitable collateral as per their policy.

5.2. For Marginal Farmers

A flexible limit of Rs.10,000 to Rs.50,000 be provided (as Flexi KCC) based on the land holding and crops grown including post harvest warehouse storage related

credit needs and other farm expenses, consumption needs, etc., plus small term loan investments like purchase of farm equipments, establishing mini dairy/backyard poultry as per assessment of Branch Manager without relating it to the value of land. The composite KCC limit is to be fixed for a period of five years on this basis. Wherever higher limit is required due to change in cropping pattern and/or scale of finance, the limit may be arrived at as per the estimation indicated at para 5.1. (Illustration II)

6. Disbursement

6.1. The short term component of the KCC limit is in the nature of revolving cash credit facility. There should be no restriction in number of debits and credits. However, each installment of the drawable limit drawn in a particular year will have to be repaid within 12 months. The drawing limit for the current season/year could be allowed to be drawn using any of the following delivery channels.

a. Operations through branch

b. Operations using Cheque facility

c. Withdrawal through ATM / Debit cards

d. Operations through Business Correspondents and ultra thin branches

e. Operation through PoS available in Sugar Mills/ Contract farming companies, etc., especially for tie-up advances

f. Operations through PoS available with input dealers

g. Mobile based transfer transactions at agricultural input dealers and mandies.

Note: (e), (f) & (g) to be introduced as early as possible so as to reduce transaction costs of both the bank as well as the farmer.

6.2. The long term loan for investment purposes may be drawn as per installment fixed.

7. As the CC limit and the term loan limit are two distinct components of the aggregate card limit bearing different rates of interest and repayment periods, until a composite card could be issued with appropriate software to separately account transactions in either sub limits, two separate electronic cards may be issued.

8. Validity / Renewal

i. Banks may determine the validity period of KCC and its periodic review.

ii. The review may result in continuation of the facility, enhancement of the limit or cancellation of the limit / withdrawal of the facility, depending upon increase in cropping area / pattern and performance of the borrower.

iii. When the bank has granted extension and/or re-schedulement of the period of repayment on account of natural calamities affecting the farmer, the period for reckoning the status of operations as satisfactory or otherwise would get extended together with the extended amount of limit. When the proposed extension is beyond one crop season, the aggregate of debits for which extension is granted is to be transferred to a separate term loan account with stipulation for repayment in installments.

9. Rate of Interest (ROI)

Rate of Interest will be linked to Base Rate and is left to the discretion of the banks.

10. Repayment Period

10.1.Each withdrawal under the short term sub-limit as estimated under (a) to (e) of Para 3 above ,be allowed to be liquidated in 12 months without the need to bring the debit balance in the account to zero at any point of time. No withdrawal in the account should remain outstanding for more than 12 months.

10.2. The term loan component will be normally repayable within a period of 5 years depending on the type of activity / investment as per the existing guidelines applicable for investment credit.

10.3. Financing banks at their discretion may provide longer repayment period for term loan depending on the type of investment.

11. Margin: To be decided by banks

12. Security

12.1. Security will be applicable as per RBI guidelines prescribed from time to time.

12.2. Security requirement may be as under:

i. Hypothecation of crops up to card limit of Rs. 1.00 lakh as per the extant RBI guidelines.

ii. With tie-up for recovery: Banks may consider sanctioning loans on hypothecation of crops upto card limit of Rs.3.00 lakh without insisting on collateral security.

iii. Collateral security may be obtained at the discretion of Bank for loan limits above Rs.1.00 lakh in case of non tie-up and above Rs.3.00 lakh in case of tie-up advances.

iv. In States where banks have the facility of on-line creation of charge on the land records, the same shall be ensured.

13. Other features

Uniformity to be adopted in respect of the following issues:

i. Interest Subvention/Incentive for prompt repayment as advised by Government of India and / or State Governments. The bankers will make the farmers aware of this facility.

ii. The KCC holder should have the option to take benefit of Crop Insurance, Assets Insurance, Personal Accident Insurance Scheme (PAIS), and Health Insurance (wherever product is available and have premium paid through his KCC account). Necessary premium will have to be paid on the basis of agreed ratio between bank and farmer to the insurance companies from KCC accounts. Farmer beneficiaries should be made aware of the insurance cover available and their consent is to be obtained, at the application stage itself.

iii. One time documentation at the time of first availment and thereafter simple declaration (about crops raised / proposed) by farmer from the second year onwards.

14. Classification of account as NPA

14.1. With a view to simplifying asset-classification, the Committee has recommended that an account could be treated as "standard", when the balance outstanding is less than or equal to drawing limit [short term (crop) loan] at any point of time during the preceding one year. In other words, it is suggested that the short term loan (with major component of crop loan) sanctioned on the KCC can be given the same treatment as a "cash credit" account for the purpose of applying prudential norms and should not be treated as "out of order" if the balance outstanding is less than or equal to the drawing limit and each drawl is repaid within a period of 12 months. Term loan under KCC has fixed repayment schedule and is to be governed by extant prudential norms.

14.2. Charging of interest is to be done uniformly as is applicable to agricultural advance.

15. Processing fee may be decided by banks

16. Other Conditions Suggested by Government of India while implementing the revised guidelines of KCC Scheme

- In case the farmer applies for loan against the warehouse receipt of his produce; the banks would consider such requests as per the established procedure and guidelines. However, when such loans are sanctioned, these should be linked with the crop loan account, if any and the crop loan outstanding in the account could be settled at the stage of disbursal of the pledge loan, if the farmer desires.

- The National Payments Corporation of India (NPCI) will design the card of the KCC to be adopted by all the banks with their branding.
- All new KCC must be issued as per the revised guidelines of the KCC Scheme .Further, at the time of renewal of existing KCC; farmers must be issued smart card cum debit card.

Part II- Delivery Channels- Technical features

1. Issue of cards:

The beneficiaries under the scheme will be issued with a smart card/Debit card (Biometric smart card compatible for use in the ATMs/Hand held Swipe Machines and capable of storing adequate information on farmers identity, assets, land holdings and credit profile etc). All KCC holders should be provided with any one or a combination of the following types of cards:

2. Type of Card:

A magnetic stripe card with PIN (Personal Identification Number) with an ISO IIN (International Standard Organization International Identification Number) to enable access to all banks ATMs and micro ATMs

In cases where the Banks would want to utilize the centralized biometric authentication infrastructure of the UIDAI (Unique Identification Authority of India *i.e.*, Aadhaar authentication), Debit cards with magnetic stripe and PIN with ISO IIN with biometric authentication of UIDAI can be provided.

Debit cards with magnetic stripe and only biometric authentication can also be provided depending on customer base of the bank. Till such time, UIDAI becomes widespread, if the banks want to get started without inter-operability using their existing centralized biometric infrastructure, banks may do so.

Banks may choose to issue EMV (Europay, MasterCard and VISA, a global standard for interoperation of integrated circuit cards) complaint chip cards with magnetic stripe and pin with ISO IIN (International Standard Organization International Identification Number).

Further, the biometric authentication and smart cards may follow the common open standards prescribed by IDRBT (Institute for Development and Research in Banking Technology) and IBA (Indian Banks' Association). This will enable them to transact seamlessly with input dealers as also enable them to have the sales proceeds

credited to their accounts when they sell their output at mandies, procurement centers, etc.

All the cooperative banks shall migrate to CBS platform at the earliest so as to implement the technical innovations in KCC as indicated above. Wherever CBs in the bank has not been in place, a pass book or a credit card cum pass book incorporating the name, address, particulars of land holding, borrowing limit, validity period etc. may be issued for the time being which will serve both as an identity card as well as facilitate recording of the transactions on an ongoing basis. The card, among others, would provide for a photograph of the holder.

3. Delivery Channels:

The following delivery channels shall be put in place to start with so that the Kisan Credit Card is used by the farmers to effectively transact their operations in their KCC accounts.

Withdrawal through ATMs/Micro ATM

Withdrawal through BCs using smart cards

PoS Machine through input dealers

Mobile banking with IMPS (Interbank Mobile Payment Service) capabilities/ IVR (Interactive Voice Response)

Aadhaar enabled Cards

4. **Mobile Banking/Other Channels:**

Provide Mobile banking functionality for KCC cards/Accounts as well along with Interbank Mobile Payment Service [IMPS of NPCI (National Payments Corporation of India)] capability to allow customers to use these inter-operable IMPS for funds transfer between banks and also to do merchant payment transactions as additional capability for purchases of agricultural inputs.

This mobile banking should ideally be on Un-structured Supplementary Data (USSD) platform for wider and safer acceptance. However, the banks can also offer this on other fully encrypted modes (application based or SMS based) to make use of the recent relaxation on transaction limits. Banks can also offer unencrypted mobile banking subject to RBI regulations on transaction limits.

It is necessary that Mobile based transaction platform enabling transactions in the KCC use easy to use SMS based solution with authentication thru' MPIN.

Such solutions also need to be enabled on IVR in local language to ensure transparency and security. Such mobile based payment systems should be encouraged by all the banks by creating awareness and by doing proper customer education.

A flow for such mobile based transaction system for KCC limits is enclosed for ready reference.

With the existing infrastructure available with banks, all KCC holders should be provided with any one or a combination of the following types of cards:

Debit cards (magnetic stripe card with PIN) enabling farmers to operate the limit through all banks ATMs/Micro ATMs.

- ✓ Debit cards with magnetic stripe and biometric authentication.
- ✓ Smart cards for doing transactions through PoS machines held by Business Correspondents, input dealers, traders and Mandies.
- ✓ EMV compliant chip cards with magnetic stripe and pin with ISO IIN.

In addition, the banks having a call centre/Inter active Voice Response (IVR), may provide SMS based mobile banking with a call back facility from bank for mobile PIN (MPIN) verification through IVR, thus making a secured SMS based mobile banking facility available to card holders.

Illustration I

A. <u>Small Farmer raising Multiple Crops in a year</u>

A.Assumptions:

Land holding: 2 acres

B.Cropping Pattern: Paddy- 1 acre (Scale of finance plus crop insurance per acre: Rs. 11,000)

Sugarcane- 1 acre (Scale of finance plus crop insurance per acre: Rs. 22,000)

C.Investment/Allied Activities:

(i)Establishment of 1+1 Dairy unit in 1st Year (Unit Cost: Rs. 20,000 per animal)

(ii)Replacement of pump set in 3rd Year (Unit Cost: Rs. 30,000)

2. (i) Crop loan Component

Cost of cultivation of 1 acre of Paddy and 1 acre of Sugarcane

(11,000+22,000) : Rs. 33,000

Add: 10% towards post harvest/ household expense /cons**umption** : Rs. 3,300

Add:20% towards farm maintenance : Rs. 6,600

Total Crop Loan limit for 1St Year : **Rs. 42,900**

Loan limit for 2nd Year

Add: 10% of the limit towards cost escalation/increase in scale of finance

(10% of 42,900 i.e., 4300) : Rs. 4,300

: Rs. 47,200

Loan limit for 3rd Year

Add: 10% of the limit towards cost escalation/increase in scale of finance

(10% of 47,200 i.e., 4700) : Rs. 4,700

:Rs. 51,900

Loan limit for 4th Year

Add: 10% of the limit towards cost escalation/increase in scale of finance

(10% of 51,900 i.e., 5,200) : Rs. 5,200

:**Rs. 57,100**

Loan limit for 5th Year

Add: 10% of the limit towards cost escalation/increase in scale of finance

(10% of 57,100 i.e., 4700) : Rs. 5,700

: **Rs. 62,800**

Say:<u>Rs. 63,000</u>…(A)

(ii) Term loan component:

1st Year: Cost of 1+1 Dairy Unit : Rs. 40,000

3rd Year: Replacement of Pumpset : Rs. 30,000

Total term loan amount :**<u>Rs. 70,000</u>…..(B)**

Maximum Permissible Limit/Kisan Credit Card Limit (A)+ (B) : **Rs. 1,33,000**

: Rs. 1.33 Lakh

Note:
Drawing limit will be reduced every year based on repayment schedule of the term loan(s) availed and withdrawals will be allowed up to the drawing limit.

B: Other Farmer raising Multiple Crops in a year

1. Assumptions:
2. Land holding: 10 acres
3. Cropping Pattern:

   Paddy- 5 acres (Scale of finance plus crop insurance per acre: Rs. 11,000)

   Followed by Groundnut- 5 acres (Scale of finance plus crop insurance per acre:Rs. 10,000)

   Sugarcane-5 acres (Scale of finance plus crop insurance per acre:Rs. 22,000)
4. Investment/Allied Activities:

(i)Establishment of 2+2 Dairy unit in 1st Year (Unit Cost: Rs. 1,00,000)

(ii)Purchase of Tractor in 1st Year (Unit Cost: Rs. 6,00,000)

Assessment of Card Limit

(i) **Crop Loan Component**

Cost of cultivation of 5 acres of Paddy, 5 acres of Groundnut and

5 acres of sugercane : Rs.2,15,000

Add: 10% towards post harvest/household expense/consumption : Rs.21,500

Add: 20 % towards farm maintenance : Rs. 43,000

Total Crop Loan limit for 1 st Year : **Rs.2,79,500**

Loan limit for 2nd Year

Add: 10 % of the limit towards cost escalation/increase in scale of finance

(10 % of 2,79,500 i.e., Rs. 27,950) : Rs.27,950

:**Rs.3, 07,450**

Loan limit for 3rd Year

Add: 10 % of the limit towards cost escalation/increase in scale of finance

(10% of 3,07,450 i.e., 30,750) : Rs.30,750

:Rs. 3,38,200

Loan limit for 4th Year

Add: 10 % of the limit towards cost escalation/increase in scale of finance

(10% of 3,38,200 i.e., 33,800) : Rs. 33,800

:Rs. 3,72,000

Loan limit for 5th Year

Add: 10 % of the limit towards cost escalation/increase in scale of finance

(10% of 3,72,000i.e., 37,200) : Rs. 37,200

:Rs. 4,09,000

Say Rs. 4,09,000…(A)

(ii)Term loan component:

1st Year: Cost of 2+2 Dairy Unit : Rs. 1,00,000

: Purchase of Tractor : Rs. 6,00,000

Total Term loan amount: **: Rs. 7,00,000…(B)**

Maximum Permissible Limit/ Kisan Credit Card Limit (A) + (B) : Rs. 11,09,000

Note:

Drawing Limit will be reduced every year based on repayment schedule of the term loan(s) availed and withdrawals will be allowed up to the drawing limit.

Illustration II

Assessment of KCC LIMIT

1: Marginal Farmer raising single crop in a year

1.Assumptions:

1. Loan holding : 1 acre
2. Crops grown : Paddy (Scale of finance plus crop insurance per acre:Rs. 11,000)
3. There is no change in Cropping Pattern for 5 years
4. Allied Activities to be financed- One Non Descript Milch Animal (Unit Cost Rs: 15,000)

2. Assessment of Card Limit:

(i) Crop Loan Component(Cost of Cultivation for 1 acre of Paddy)	: Rs. 11,000
Add: 10% towards post harvest/household expense/consumption	: Rs. 1,100
Add: 20 % towards farm maintenance	: Rs. 2,200
Total Crop Loan limit for 1 st Year	**: Rs. 14,300…..A1**

(ii) Term loan component:	
Cost of One Milch Animal	**: Rs. 15,000……B**
1st Year Composite KCC Limit : (A1) + (B)	**:Rs.29,300**
2nd Year:	
Crop loan component:	
A1 plus 10% of crop loan limit (A1) towards cost escalation/ increase in scale of finance[14,300+(10% of 14,300=1430)]	**:Rs. 15,730……A2**
2nd year Composite KCC Limit : A2+B (15,730+15,000)	**: Rs. 30,730**
3rd Year:	
Crop loan component:	
A2 plus 10% of crop loan limit (A2) towards cost escalation/ increase in scale of finance[15,730+(10% of 15,730=1570)]	**:Rs. 17,300….A3**
3rd year Composite KCC Limit : A3+B (17,300+15,000)	**: Rs. 32,300**
4th Year:	
Crop loan component:	
A3 plus 10% of crop loan limit (A3) towards cost escalation/ increase in scale of finance[17,300+(10% of 17,300=1730)]	**:Rs. 19,030……A4**
4th year Composite KCC Limit : A4+B (19,030+15,000)	**: Rs. 34,030**
5th Year:	
Crop loan component:	
A24plus 10% of crop loan limit (A2) towards cost escalation/ increase in scale of finance[19,030+(10% of 19,030=1900)]	**:Rs. 20,930……A5**
5 th year Composite KCC Limit : A5+B (20,930+15,000)	**: Rs. 35,930**
	Say Rs. 36,000

Maximum Permissible Limit/ Composite KCC Limit	**:Rs. 36,000**

Note: All the above costs estimated are illustrative in nature. The recommended scale of finance/unit costs may be taken into account while finalizing the credit limit.

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Appendix- III

Action Taken Report on Comments from Agro-Economic Research Centre, Visva-Bharati, Santiniketan on the Draft Report **"Impact of Credit on Agricultural Production with Special Reference to Crop Loan and KCC Scheme - An Empirical Study in Assam"**

Reviewer Comments:

1. ***Title of the draft report examined***
   Impact of Credit on Agricultural Production with Special Reference to Crop Loan and KCC Scheme- An Empirical Study in Assam

2. a) ***Date of receipt of the Draft Report:*** 22nd Sept.2015

   b) ***Date of Assignment to the Reviewer:*** 1st October; 2015

3. ***Date of dispatch of the comments***: 8th October, 2015

4. ***Comments of the Objectives of the study:*** All the objectives of the study have been addressed

5. ***Comments on the methodology:*** Methodologies as stated in the study design have been followed.

6. ***Comments on analyses, organization, preparation etc..***

   i) Source of information about "farmers' suicide" should be mentioned
   Action: Source of information has been incorporated.

   ii) If possible, latest information (numbers) regarding issuance of KCC in Assam may be mentioned.
   Action: Latest information (numbers) regarding issuance of KCC in Assam is added (up to 2013-14).

   iii) In Table no 2.7 unit of operational holding has been inadvertently omitted.
   Action: Unit of operational holding has been incorporated.

   iv) In page No18, in the first paragraph during mentioning of farmers 'selection" from each of the district" should be deleted.
   Action: Done as per suggestion.

v) Does presence of widowers and divorcees can relate the efficacy and functioning of KCC?

Action: The efficacy and functioning of KCC were not quantitatively measure in relation to presence of widowers & divorcees in the family. However, they did affect the family life of the farmers as witnessed in the study area.

vi) Pl. correct the figure of diesel sets in page 37 (46+24=70 not 60)

Action: Correction has been made. The corrected figure of diesel pump sets at page 37 should be (46+14=60)

vii) Subsidiary occupation plays an important part in all levels of gainful activities including agriculture; break-up of activities may be given (if possible) to surmise the extent of influence of these sectors and its influence of credit need.

Action: In the study area, most of the respondents had different types (more than 8) of subsidiary occupations which were concentrated mostly amongst the small, marginal and medium size group of farmers. To avoid bulkiness of the report and also in consideration of time factor deliberately break-up of the subsidiary economic activities was not incorporated.

viii) In case of regression analysis made in chapter 4, please take care of the following-

a) Kindly define variables in the model in greater detail. For example, please state whether the variable named 'up to primary' includes illiterates or not. As well, what does it exactly represent? That is, whether it represents the number of persons educated up to primary level in a particular family or not. Here, we suggest that you may also think of introducing independent dummy variables.

Action: Variables in the model have already been defined in the chapter I. Up to Primary level indicates I-V standard. In the study area, no respondents were found illiterate. In the analysis, data relates to the respondent farmers only and not to all family members. Independent dummy variables were used only against the educational standard of the respondents. In case of independent variables such as Family size, Operational holding, Agricultural farm income, Ratio of irrigated land to the total operational area and Farm Assets were used as independent variables.

b) Please check whether you need to y include educational subcategories separately as they all comes out to be significant.

Action: Educational sub-categories are included in the model separately as independent dummy variables.

c) as 8 out of 10 independent variables appear significant in the regression model, please rule out the presence of multicollinearity among them.

Action: Complied with.

d) in case of analysis of regression results, please assign due importance to the direction of estimated impact, especially when it is a logit regression model.

Action: As per theory, the logit model is invariably used in determining the influencing factors for participation in any programme (motivating factors). Accordingly, due importance is given on impact issues.

ix) One brief summary at the end of each Chapter is suggested. In the Policy Recommendation segment of the study and as per the Ministry's format, attention drawn to the respective Departments/Concerns should be mentioned within bracket. Finally, there are some typing and inadvertent grammatical errors. These should be corrected accordingly.
Action: Done as per suggestion.

7. ***Overall view on acceptability of the Report:***

The report is well drafted where all the objectives have been addressed. The report can be accepted after the necessary corrections/modifications are made.

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