DEPARTMENT OF ECONOMICS
NAGALAND UNIVERSITY

DECLARATION

I, Miss THEJOTALÜ NEINU hereby declare that the work embodied in this thesis titled, **"Agriculture Credit inNagaland: A Comparative Study of Phek and Kohima Districts"**has been carried out by me under the supervision of Dr.Giribabu.M is original. The contents of thesis or a part of it has not been submitted for a degree in any other University or Institute.

This is being submitted to Nagaland University for the degree of Doctor of Philosophy in Economics.

Research Scholar

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Regd. No505/2012

Head of the Department

Supervisor

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CERTIFICATE

This is to certify that the thesis "**AGRICULTURE CREDIT IN NAGALAND: A COMPARATIVE STUDY OF PHEK AND KOHIMA DISTRICTS**" submitted for the Degree of Doctor of Philosophy by Miss THEJOTALÜ NEINUbearing Registration No. 505/2012is a record of research work done by her under my supervision and guidance.

I certify that this work has not been presented for any degree elsewhere and that the candidate has fulfilled all conditions laid down by the university.

(DR. GIRIBABU. M)
Supervisor

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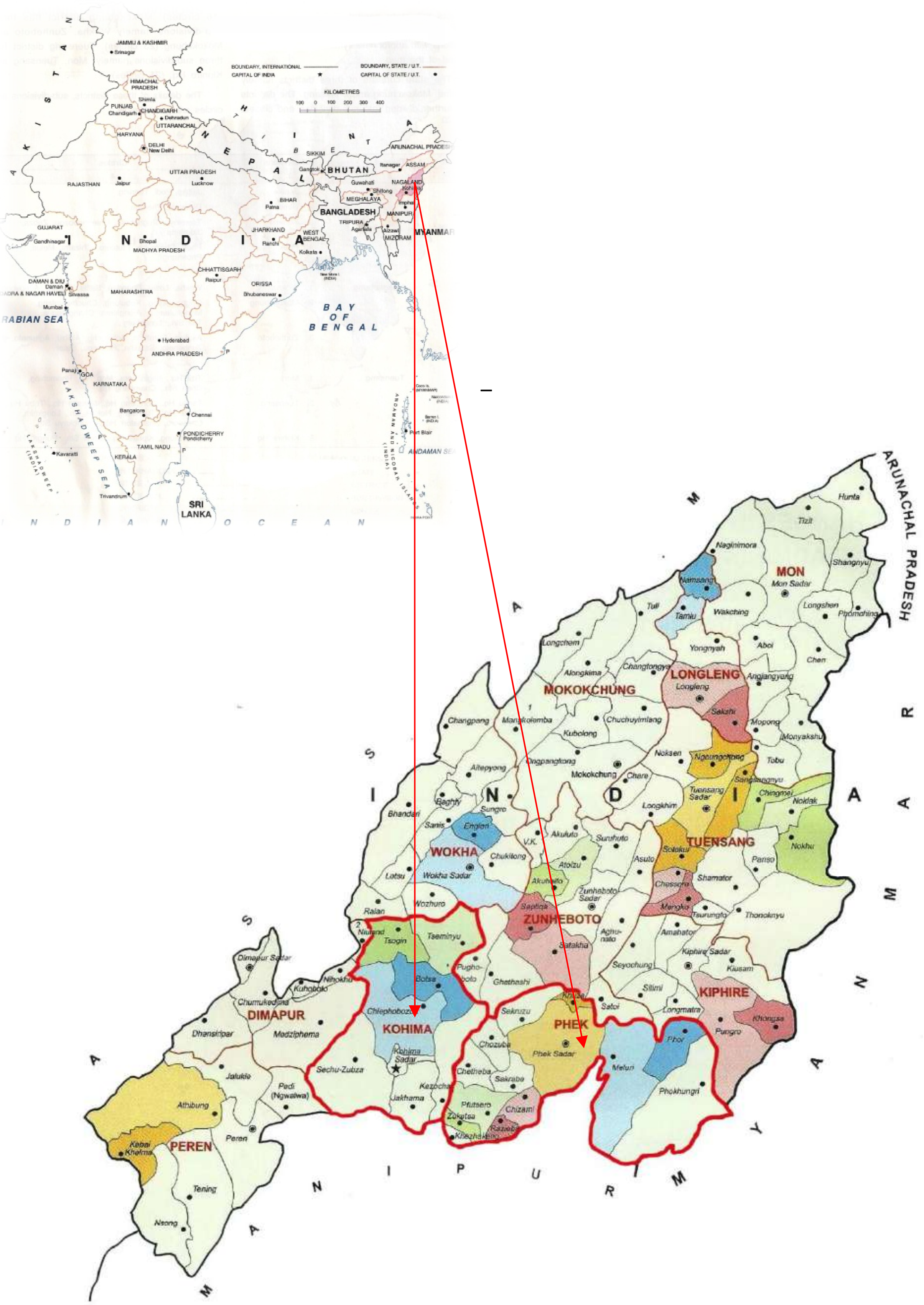
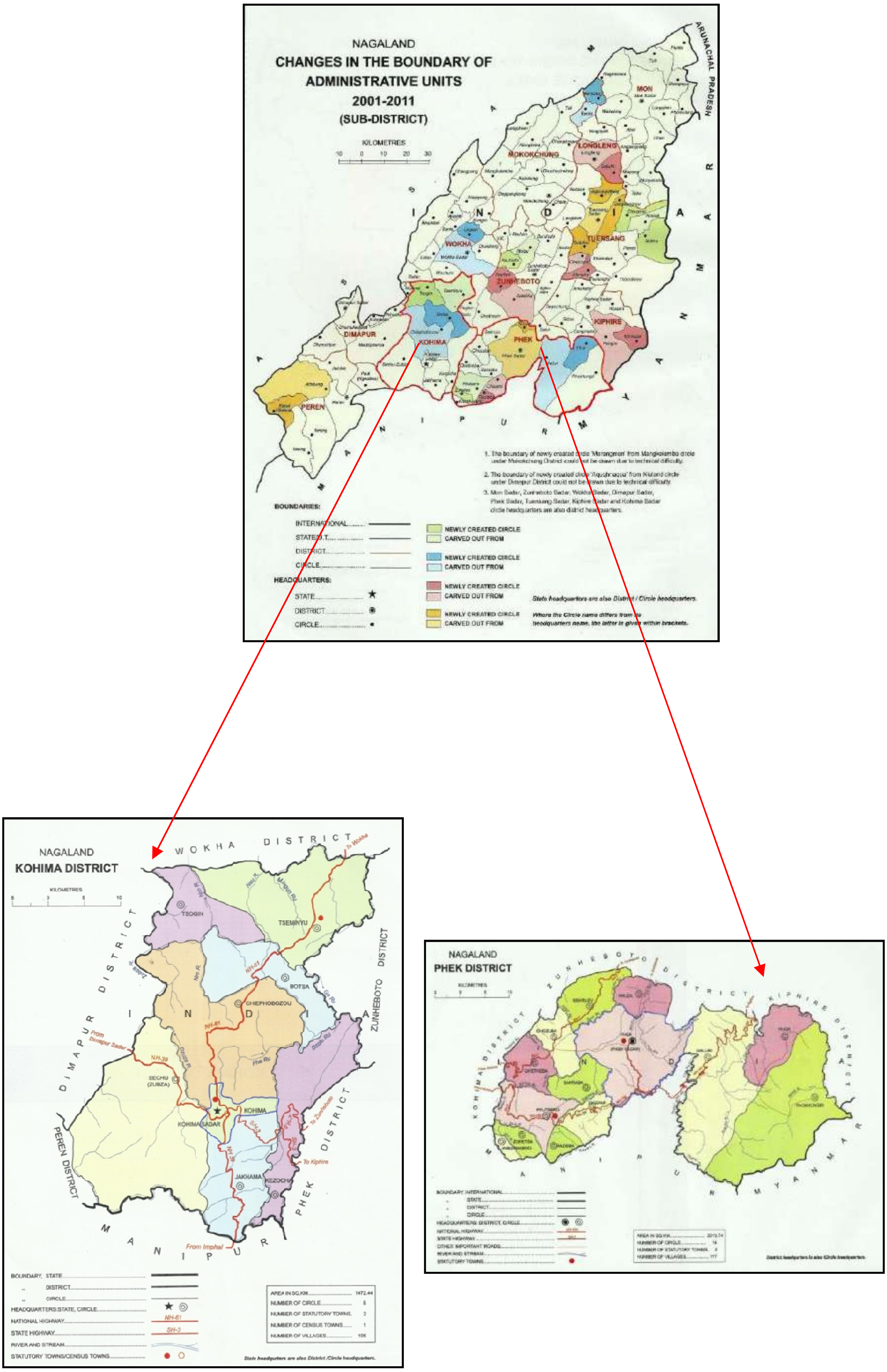
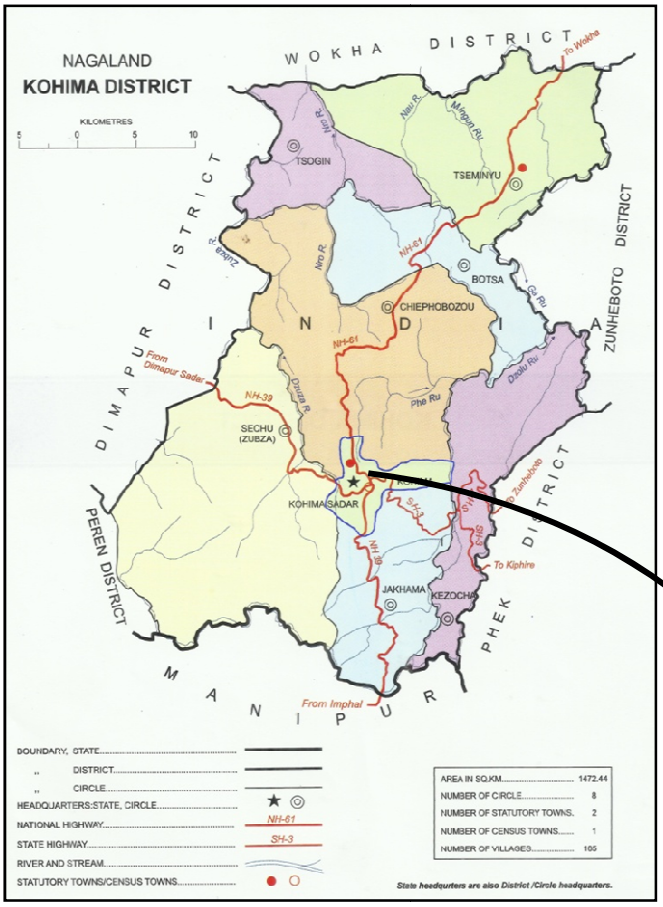


JAMMU & KASHMIR
Srinagar
HIMACHAL PRADESH
Shimla
PUNJAB
Chandigarh
CHANDIGARH
Dehradun
UTTARANCHAL
HARYANA
DELHI
New Delhi
RAJASTHAN
Jaipur
UTTAR PRADESH
Lucknow
BIHAR
Patna
SIKKIM
Gangtok
BHUTAN
ARUNACHAL PRADESH
ASSAM
Guwahati
Shillong
MEGHALAYA
NAGALAND
Kohima
MANIPUR
Imphal
BANGLADESH
TRIPURA
Agartala
MIZORAM
Aizawl
MYANMAR
GUJARAT
Gandhinagar
MADHYA PRADESH
Bhopal
JHARKHAND
Ranchi
WEST BENGAL
Kolkata
CHHATTISGARH
Raipur
ORISSA
Bhubaneswar
DAMAN & DIU
Daman
MAHARASHTRA
Mumbai
ARABIAN SEA
BAY OF BENGAL
Hyderabad
ANDHRA PRADESH
Panaji
GOA
KARNATAKA
Bangalore
Chennai
PONDICHERRY
TAMIL NADU
KERALA
Kavaratti
Trivandrum
SRI LANKA
Port Blair
INDIAN OCEAN
NEPAL
CHINA
PAKISTAN
INDIA
BOUNDARY, INTERNATIONAL
CAPITAL OF INDIA
BOUNDARY, STATE / U.T.
CAPITAL OF STATE / U.T.
KILOMETRES
ARUNACHAL PRADESH
MON
Mon Sadar
LONGLENG
Longleng
MOKOKCHUNG
Mokokchung
TUENSANG
Tuensang Sadar
WOKHA
Wokha Sadar
ZUNHEBOTO
Zunheboto Sadar
KIPHIRE
Kiphire Sadar
KOHIMA
Kohima Sadar
PHEK
Phek Sadar
DIMAPUR
Dimapur Sadar
PEREN
Peren
Meluri
Phokhungri
Chozuba
Pfutsero
Chizami
Tseminyu
Tsogin
Chiephobozou
Sechu-Zubza
Jakhama
Medziphema
Dhansiripar
Jalukie
Athibung
Tening
Nsong
Longchem
Tuli
Changtongya
Naginimora
Tizit
Hunta
Wakching
Aboi
Chen
Longshen
Noksen
Shamator
Thonoknyu
Pungro
Kiusam
Satakha
Bhandari
Ralan
ASSAM
MANIPUR
MYANMAR
INDIA



NAGALAND
CHANGES IN THE BOUNDARY OF ADMINISTRATIVE UNITS 2001-2011
(SUB-DISTRICT)
KILOMETRES
ARUNACHAL PRADESH
MON
LONGLENG
MOKOKCHUNG
TUENSANG
WOKHA
ZUNHEBOTO
KIPHIRE
KOHIMA
PHEK
DIMAPUR
PEREN
1. The boundary of newly created circle 'Merangmen' from Mangkolemba circle under Mokokchung District could not be drawn due to technical difficulty.
2. The boundary of newly created circle 'Aquqhnaqua' from Niuland circle under Dimapur District could not be drawn due to technical difficulty.
3. Mon Sadar, Zunheboto Sadar, Wokha Sadar, Dimapur Sadar, Phek Sadar, Tuensang Sadar, Kiphire Sadar and Kohima Sadar circle headquarters are also district headquarters.
BOUNDARIES:
INTERNATIONAL
STATE/U.T.
DISTRICT
CIRCLE
HEADQUARTERS:
STATE
DISTRICT
CIRCLE
NEWLY CREATED CIRCLE
CARVED OUT FROM
State headquarters are also District / Circle headquarters.
Where the Circle name differs from its headquarters name, the latter is given within brackets.
NAGALAND
KOHIMA DISTRICT
KILOMETRES
WOKHA DISTRICT
DIMAPUR DISTRICT
ZUNHEBOTO DISTRICT
PEREN DISTRICT
PHEK DISTRICT
MANIPUR
TSOGIN
TSEMINYU
BOTSA
CHIEPHOBOZOU
SECHU (ZUBZA)
KOHIMA
KOHIMA SADAR
JAKHAMA
KEZOCHA
From Imphal
To Kiphire
BOUNDARY, STATE
DISTRICT
CIRCLE
HEADQUARTERS:STATE, CIRCLE
NATIONAL HIGHWAY
STATE HIGHWAY
RIVER AND STREAM
STATUTORY TOWNS/CENSUS TOWNS
AREA IN SQ.KM. 1472.44
NUMBER OF STATUTORY TOWNS 2
NUMBER OF CENSUS TOWNS 1
State headquarters are also District /Circle headquarters.
NAGALAND
PHEK DISTRICT
KILOMETRES
ZUNHEBOTO DISTRICT
KIPHIRE DISTRICT
KOHIMA DISTRICT
MANIPUR
MYANMAR


NAGALAND
KOHIMA DISTRICT
KILOMETRES
5 0 5 10
WOKHA DISTRICT
DIMAPUR DISTRICT
ZUNHEBOTO DISTRICT
PEREN DISTRICT
PHEK DISTRICT
MANIPUR
INDIA
To Wokha
TSOGIN
TSEMINYU
BOTSA
CHIEPHOBOZOU
SECHU (ZUBZA)
KOHIMA SADAR
JAKHAMA
KEZOCHA
From Dimapur Sadar
NH-61
NH-39
SH-3
To Kiphire
From Imphal
BOUNDARY, STATE
DISTRICT
CIRCLE
HEADQUARTERS:STATE, CIRCLE
NATIONAL HIGHWAY
STATE HIGHWAY
RIVER AND STREAM
STATUTORY TOWNS/CENSUS TOWNS
AREA IN SQ.KM 1472.44
NUMBER OF CIRCLE 8
NUMBER OF STATUTORY TOWNS 2
NUMBER OF CENSUS TOWNS 1
NUMBER OF VILLAGES 105
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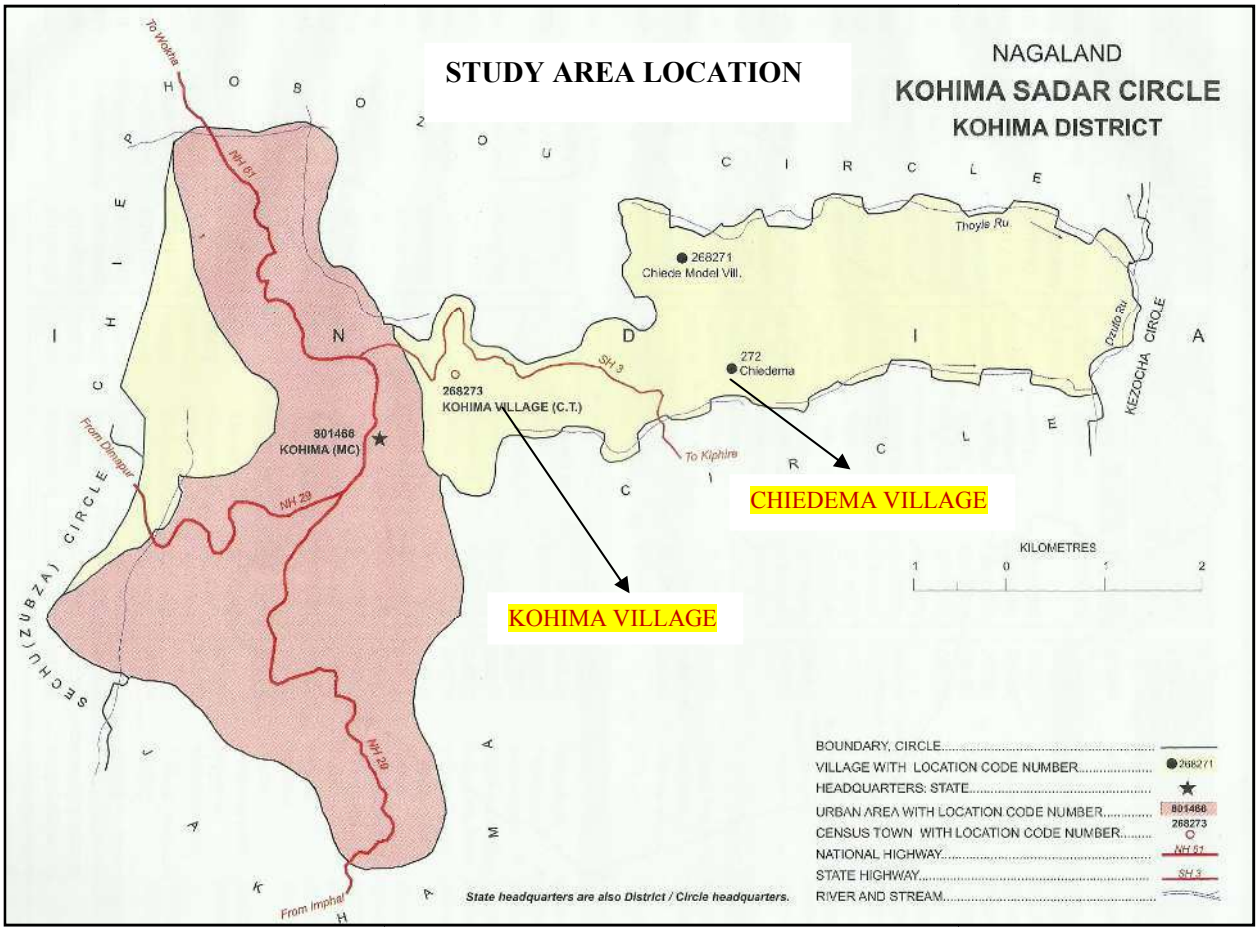
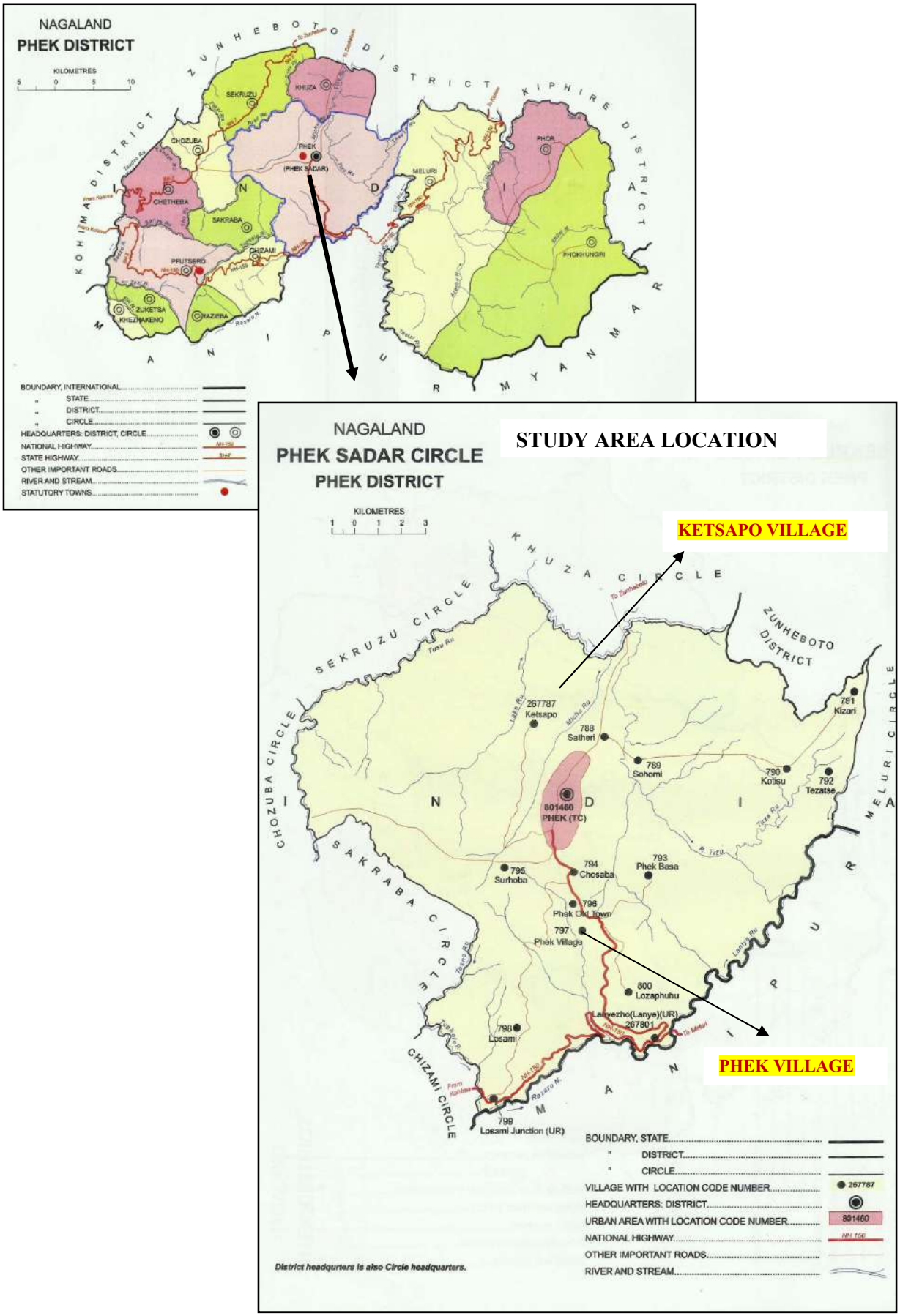

STUDY AREA LOCATION
NAGALAND
KOHIMA SADAR CIRCLE
KOHIMA DISTRICT
To Wokha
NH 61
268271
Chiede Model Vill.
Thoyle Ru.
272
Chiederna
SH 3
268273
KOHIMA VILLAGE (C.T.)
801466
KOHIMA (MC)
From Dimapur
NH 29
To Kiphire
KEZOCHA CIRCLE
SECHU (ZUBZA) CIRCLE
CHIEDEMA VILLAGE
KOHIMA VILLAGE
KILOMETRES
1 0 1 2
BOUNDARY, CIRCLE
VILLAGE WITH LOCATION CODE NUMBER 268271
HEADQUARTERS: STATE
URBAN AREA WITH LOCATION CODE NUMBER 801466
CENSUS TOWN WITH LOCATION CODE NUMBER 268273
NATIONAL HIGHWAY NH 61
STATE HIGHWAY SH 3
RIVER AND STREAM
State headquarters are also District / Circle headquarters.


NAGALAND
PHEK DISTRICT
KILOMETRES
5 0 5 10
ZUNHEBOTO DISTRICT
KIPHIRE DISTRICT
KOHIMA DISTRICT
MYANMAR
SEKRUZU
KHUZA
CHOZUBA
PHEK
(PHEK SADAR)
MELURI
PHOR
CHETHEBA
SAKRABA
CHIZAMI
PHOKHUNGRI
PFUTSERO
ZUKETSA
KHEZHAKENO
KAZIEBA
BOUNDARY, INTERNATIONAL
" STATE
" DISTRICT
" CIRCLE
HEADQUARTERS: DISTRICT, CIRCLE
NATIONAL HIGHWAY
STATE HIGHWAY
OTHER IMPORTANT ROADS
RIVER AND STREAM
STATUTORY TOWNS
NAGALAND
PHEK SADAR CIRCLE
PHEK DISTRICT
STUDY AREA LOCATION
KILOMETRES
1 0 1 2 3
KETSAPO VILLAGE
KHUZA CIRCLE
SEKRUZU CIRCLE
ZUNHEBOTO DISTRICT
CHOZUBA CIRCLE
SAKRABA CIRCLE
CHIZAMI CIRCLE
MELURI CIRCLE
267787 Ketsapo
788 Sathari
789 Sohomi
790 Kotisu
791 Kizari
792 Tezatse
801460 PHEK (TC)
793 Phek Basa
794 Chosaba
795 Surhoba
796 Phek Old Town
797 Phek Village
800 Lozaphuhu
Lanyezho(Lanye)(UR) 267801
798 Losami
799 Losami Junction (UR)
PHEK VILLAGE
BOUNDARY, STATE
" DISTRICT
" CIRCLE
VILLAGE WITH LOCATION CODE NUMBER 267787
HEADQUARTERS: DISTRICT
URBAN AREA WITH LOCATION CODE NUMBER 801460
NATIONAL HIGHWAY NH 150
OTHER IMPORTANT ROADS
RIVER AND STREAM
District headquarters is also Circle headquarters.

CHAPTER 1

INTRODUCTION

1.1: Introduction

Credit plays an important role in all the models of growth and development and it raises the productive capacity of the sectors and serves as an accelerator for better livelihood (Belshaw, H 1931)[1]. India, since independence has taken several steps to extent credit facilities to the rural farmers. Consequently, credit as a strategy for agricultural development in our country has been founded on the philosophy of "growth with equity" (Samir Samantara & Badatya, K. C.)[2]. The Government of India, in order to strengthen the institutional sources of credit to agriculturists, among many other things setup NABARD in 1982 to channelized credit flow through the Co-Operative Banks, Scheduled Commercial Banks (SCBs), and the Regional Rural Banks (RRBs). They are intended to meet the inadequacy and weaknesses of the non-institutional sources of credit. Nonetheless, institutional and non- institutional credit continuous to operate together in the field of Indian agriculture.

All available evidences seems to indicate that the formal rural financial system in India is currently trapped in a vicious circle of stagnant or even declining credit deposit ratio and abnormally high cost of credit and default rate. While the borrowers are confronting high interest rates, high transaction costs and other impediments to access credit, the banks and other formal lending institutions are complaining of low demand, besides exorbitant rates, which seem to be further restricting their credit operations. Informal credit, on the other hand, in spite of reported decline in its share of total credit as per official records, seems to be too resilient to face any serious problem. In fact, informal credit appears to be going quite strong in several parts and pocket of the country. The problems of credit are even more severe for marginal, small farmers

1. Belshaw, H (1931), *"The Provision of Credit with Special Reference to Agricultural Cambridge*". Aukland University Press.
2. http://www.igidr.ac.in/..../Credit_Perspective_for 2020_samirsamantara.pdf

(Thorat Y.S.P, 2006[3]) and other vulnerable sections of the rural community, who often lack marketable collateral, credit-worthy projects and even political clout to access formal sources of credit. In spite of governmental stipulations in the form of priority sector credit and targets therein, the formal lenders are often not too keen to lend to the large number of borrowers belonging to the poor and vulnerable communities.

1.2: Conceptual Definition of Credit

Credit can be defined as "an agreement between a borrower who takes some money for productive investment and, a lender, who deploys his capital for earning some interest over his spaced money" (Prakash, N at el (1971)[4], and "this agreement, in financial sense is made with the hope that both the parties will benefit from it. This benefit may be financial or in some other form. However, credit pays both the parties economically". (Mahajan, Charulata1970)[5].

Credit can also be understood as the confidence placed among parties which he/she can use the value of a thing for a particular period of time, usually granted on a security in different form. Therefore, agricultural credit is an agreement between a lender and a borrower mostly farmer for a period of time to increase the productivity of agriculture on the one hand, and to earn a rate of interest on the other side of the lending party for that particular period of time usually accorded on the security in different form.

Increasing of institutional credit to farmers requires the transformation of rural credit system from limited informal, traditional, local savings and lending arrangements to an integrated formal, national savings and credit system (Steven, D.R and C.L Jabara 1988)[6]. The Agricultural Credit Policy essentially lays emphasis on augmenting credit flow at the ground level through credit planning, adoption of region-specific strategies,

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3. Thorat, Y.S.P. (2006), "Rural Credits in India: Issues and Concerns". *Indian Journal of Agricultural Economics*, Vol.61, No.1, pp. 1-10.
4. Prakash, N and Talwalkar (1971), "Economic Affairs in Farm Business", *Australian Economic Review*, Jan-March 1971, pp.20.
5. Mahajan, Charulata (8th June 1970), "Farm Finances in India". *The Hindu, Madras*, 8th June
6. Steven, D.R and C.L Jabara (1988), *Agricultural Development Principles: Economics Theory and Empirical Evidence.* John Hopkin University Press, Maryland, USA.

rationalization of lending policies and procedures and bringing down the cost of borrowing. Credit is broadly classified as institutional and non-institutional.

1.3: Institutional Credit

With the dawn of modernization, an era of traditional farming was replaced by the growing technological methods of farming; hence there is an increasing demand for credit. This multiple demands are provided by financial institutions at a fixed rate of interest, depending upon the terms of contract, the purpose and the amount of loans borrowed. These types of credit obtain from an organized financial institutions are known as institutional credit. The financial institutions are set up solely for the purpose of providing financial assistance to individual/individuals. The main institutional sources of credit in India are the Co-operative Banks (CBs), the Commercial Banks and the Regional Rural Bank. Depending upon the needs of the farmers these financial institutions provides:-

i) Short-term loans ranging upto 15 months for cultivation and domestic expenses.

ii) Medium term loans for 15 months to 5 years, usually for land improvement, buying agricultural implements and even for buying cattle.

iii) Long-term credit for more than 5 years which the farmers need for the purpose of buying additional land, purchasing of costly agriculture machinery and repaying of old debt.

The Primary Agriculture Credit societies (PACs) provide mainly short term loan, the Land Development Banks (LDBs), also known as the Co-operative Agricultural and Rural Development Banks (CARDBs), provides medium and long term loans. The National Bank for Agriculture and Rural Development (NABARD**),** set up in 1982, is now the apex institution in refinancing and promoting agriculture and the rural developments of the country. Its finances are provided through the direction of the central bank i.e. the RBI.

Government also provides short term as well as long-term loans, popularly known as *"Taccavi loans"* which are generally advanced in times of natural calamities.

The rate of interest is low; but this is not a major source of agricultural finance. Micro-financing through Self Help Groups (SHGs) which are register groups had assumed prominence in recent years, volunteering to eradicate poverty among the members through joint-saving.

Agriculture credit can also be further classified as direct and indirect depending on the nature of finance it provides to the farmers.

1.3.1: Direct Finance

The direct finances are granted for long period of time at low rate of interest and the repayment plan is convenient which are usually done in equal annual installments. In this type of loan the farmer is free to choose and decide for the purpose on how the fund is to be utilized.

1.3.2: Indirect Finance

Under the indirect finance the farmers are assisted through subsidized prices of seeds, fertilizers and equipments. It is implemented through price stabilization scheme and in consultation with the RBI and the government prescribes a low rate of interest to weaker section in rural areas. Indirect agriculture finance such as creating condition in the forms of constructing agriculture marketing shed for rural farmer, providing agriculture tools at subsidized rate and distributing better quality seeds to needy farmers.

1.4: Non Institutional Credit

Credit from unorganized sectors is known as non-institutional credit. Non institutional credits are provided by the money lenders, landlord, commission agents, trader, professional money lenders, non-professional money lenders, such as relatives/friends/others. The interest rate charges are usually higher than that of formal credit, and differ from one lender to another. There is no uniform rate of interest under the unorganized sector of lending, unlike the formal institutions which fixes the rate of interest institutionally.

The borrowed amounts are often repaid in kinds or cash in the past. If the terms of the contract expire without repayment as per the agreement, the creditor takes away the debtor's property. Some money lenders charged very high rate of interest and exploit the poor peasantry. Exploitation of the tenants has not declined and consequently, the fruits of agriculture progress are being pocketed by the rich farmers and the money lenders. The small and marginal farmers are cheated by the money lenders and their lands and properties are confiscated and several landless farmers are forced to become bonded laborers.

Despite several disadvantages, non-institutional sources of credit dominated the Indian agricultural system in the past and it continues to play a major role in financing the agriculture in rural area due to simple and flexible procedure, accessibility without formalities and unrestricted supply of credit for any purpose. The rural farmers who are illiterate crippled with financial constraint took upon the help of unscrupulous money lender and get no benefit for themselves, but devastation at the end. Perhaps, it was due to multiple impediments the government brought out bold and revamping reforms in the institutional financing of agriculture.

1.5: Agriculture Credit and its Significance

Schumpeter identifies "credit as an essential organizing instrument of agricultural development, which enables the innovator to bid resources away from other activities"[7]. He explained further that the cyclical process of investment through the creation of bank credit to create a cumulative expansion through the economy. Indian agriculture faces multiple challenges which have culminated in severe crisis. The farm crisis has the twin dimension (Prof. V.M, Rao)[8] "an agrarian crisis and an agriculture crisis". The two are interlinked and calls for an independent attention. The declining rate of agriculture productivity and profitability has accentuated the general adversity in the livelihood of the small farmers and an increasing population depending on agriculture. Agriculture credit becomes very relevant as it form the backdrop for answering the many demand side questions. Relying on K.N Raj's work, Mahir Shah et

7. Desai, R. G (1988), *"Farmer societies and Agricultural Development"*. Chugh Publications**.** Allahabad, India
8. Prof. Rao, M.V (2007-08), "Agricultural Credit in India: Changing Profile of Regional Imbalances". *Economic and Political Weekly* , Research Foundation, Mumbai

al. (2007)[9] argues that, rural credit was not merely a commodity that is needed to reach the poor to free them from usurious money lenders, it could also be seen as a public good necessary for the development of a backward agrarian economy like India, especially as the Indian agriculture moved decisive into green revolution phase, where private investment by richer farmers needed massive credit support".

Several decades of experimenting with agricultural credit shows that credit is an important accelerator of agricultural development. This is because farmers need to spend more to improve the productivity. "A farmer with no capital of not more than a spade, a rake and a sickle could work very hard in farming an acre or two of land, but, the amount of farm produce at the end of the year would be very little to support his family"[10]. Therefore, it was found that credit is the most urgent needs of the cultivators, it is as important as any other tool used in the agricultural production. It enables a farmer to make productive investment, which he (farmer) obtain for a temporary period of time accorded on a security. Moreover, the intensive application of science and technology, and the increasing commercialization of agriculture require huge capital. Access to financial support in turn, can help to unlock the potential of commodity producers (especially smallholders), processors and agribusinesses in developing and emerging economies like India. Credit by itself is not enough to solve all the problems faced by needy farmers, however, access to institutional credit can help to turn the vicious circle of poverty in agricultural sector into a virtuous cycle of growth in the economy.

Experience shows that easy access to financial service at affordable cost positively affects the productivity, asset formation, and income and food security of the rural poor. The major concern of the government is therefore to bring all farming households within the banking fold and promote complete financial inclusion. The green revolution of India during the 1960s which had been applauded the world over, depend to a large extend, an increased in public investment and institutional credit support to agriculture in terms of expansion in inputs like high yielding seed(HYV),

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9. Shah, Mahir, Rao, Rangu Rao and Shankar Vijay and Shankar Vijay (2007), "Rural Credit in 20th Century India: An Overview of History and Perspective". *Economic and Political Weekly*, April 2007.

10. Banerjee, P.K (1977), *"Indian Agriculture Economy; Financing Small Farmers"*. Chetana Publications. New Delhi.

chemical fertilizers/pesticides/weedicides/ herbicides, irrigation, mechanization etc. (Samantara, Samir and Badatya, K. C.)[11]. The total government outlay on agriculture and allied sector had increased from Rs 950 crores during the second plan period to Rs 1750 crores in the third[th] plan programme, and was able to increase the food grain production from 67 million tonnes to 80 million tonnes in the same plan periods. The government felt the success of agricultural sector and therefore introduced the Intensive Agricultural Districts Plan (IADP), followed with the introduction of High Yielding Variety of Programme (HYVP).

1.6: Statement of the Problem

No doubt, credit has been recognized as the crucial input of agriculture growth, the government of India, since the first five year plan (1951-1956), emphasised on the importance of institutional credit to agriculture. The total institutional credit to agriculture sector increases from Rs 6230 crores during 1984-85, to Rs.1, 80,480 crores in 2005-06. Nevertheless, most of the rural farmers continue to face serious problem because of deteriorating agricultural production by lack of capital. Poor farmers possess low income level which is inadequate to satisfy their requirements of working capital and smooth consumption. At the beginning of the crop cycle, farmers face a considerable capital need for purchasing seeds, fertilizers, pesticides. To purchase all the inputs and to meet consumption needs over the period of production, farmer requires credit. In addition to that agriculture is labour intensive and a lot of labour cost is involved. At present, the daily wage rate for laborer is Rs 300 to Rs 500 per day. The productivity and profitability of our traditional methods of agricultural cultivation needs to be seriously contemplated.

Besides, more population is depending on agriculture for livelihood and there is an increasing market demand for agriculture products. The farmers are poor but efficient, and since agriculture sector has high risk associated with fluctuation in its products requires external assistance. Market based tools to insure against commodity price volatility can help reduce the risk of default and can help improve the small and

[11]. Samantara, Samir and Badatya, K.C, "A Perspective on Agricultural Credit 2020" http://www.igidr.ac.in/…/Credit_Perspectives_for_2020_samir samantara.pdf

marginal farmers. Moreover, many of our farmers are unaware of the available facilities within their doorstep, while other are excessively utilizing for no productive end.

Moreover, in the credit delivery system, there are significant disparities across the region of the country. This is reflected in the resource flow biasness towards some favored region and neglect of the others, leading to differences in accessing social service benefit, basic capital requirement etc. Eventually, the less favored region witnesses lower productivity of the land. There are cases of over-financing in some area and under-financing in others. Regional disparities have been felt in many parts of the country, specially the northeastern region. This regional disparity is attributed by the absence of functioning rural financial markets and institutions, which culminate again to high transaction and supervisory costs of lending. This disparity gives rise to various socio-economic problems. The neglect of agricultural sector in Nagaland makes the state as a dependent economy, depending largely upon the import of various agricultural produce from the neighboring states of Assam, West Bengal etc.

Perhaps, the overall practice of agriculture in Nagaland is very different from the main land India, be it in the form of land holding pattern, methods of farming etc. Every household cultivate that is just enough for self consumption and save a minute part of it for sowing in the next season. There is hardly any surplus for market. Besides, the North Eastern Region is sluggish in the adoption of improved technology in agriculture, irrigation, land development and dairying, which requires huge investment on the part of the farmers, but since their savings are low they are to be assisted with external institutional finance.

1.7: Objectives of the Study

In the light of above background, the focus of the present study is to identify the agricultural credit and its distribution and thereby examine the impact of socio economic conditions of farmer borrowers in the Districts of Phek and Kohima. With this broad issue in mind, the following objectives are set for the study.

1. To analyze the extent of credit distribution to the agriculture sector in selected villages of Phek and Kohima Districts in Nagaland.

2. To assess the interest rates and repayment conditions of the borrowers in study villages of the two Districts.
3. To study the factors determining the borrowing and indebtedness of member borrowers towards different sources of finance.
4. To examine the impact of credit to the farmers and their levels of income and employment activities.

1.8: Research Hypothesis

1. The marginal and small farmers are in an unfavorable condition to access the institutional credit with higher transaction cost and complexity in procedures.
2. Land size and family assets are the major factors that determine the accessibility of institutional credit than education and family size of the borrower.
3. Despite of the existing credit facilities, progress in income and employment levels of the borrowers are insignificant.

1.9: Data and Methodology

a). Area of the Study

Keeping in view the magnitude of the problem and its importance in the developmental strategies of a state like Nagaland, it is very significance to study the problem at regional level following an intensive approach. Nagaland is a dominant agricultural State with 80% of population and 60% of workforce engaged in the agriculture. The importance of farm credit as a crucial input to agriculture is reinforced by the unique role of agriculture in the macroeconomic framework and its role in other developmental aspects. Therefore, a proper credit linkage is essential for the development of agriculture in the State. Both institutional and non-institutional credit system operate in the State. Besides, Nagaland has a unique constitutional provision with regard to the delivery of finances through the Village Development Board (VDBs). This decentralized system of governance empowered the VDBs to play the role of both financial intermediaries and non-banking financial intermediaries in the State.

At the macro level, the entire 11 Districts of the state is covered, and at the micro level analysis, multi stage stratified random sampling technique has been applied in the selection of representative Districts, to Rural Development (RD) Blocks, villages and household. The two Districts are Phek and Kohima. The Districts are further narrow down to RD Block level as per segregation provided by the Directorate of Rural Development, Govt. of Nagaland, and selected Kohima RD Block and Phek RD Block. Within these RD blocks, 2(two) villages each Kohima Village and Chedema Village in Kohima District and Phek Village and Ketsapo Village in Phek District are selected for the study as indicated in the table 1.1. In the final stage, the farming households constitute the sample units of the study. A total of sample of 225 households has been surveyed, which consist of 108 respondents in Kohima District and 117 respondents in Phek District respectively.

Table: 1.1: The sample under study

State level	Districts level	RD Block level	Village level	
Nagaland	Kohima	Kohima RD Block	Kohima Village	Chedema Village
	Phek	Phek RD Block	Phek Village	Ketsapo Village

Kohima District is one of the oldest of the 11 Districts of Nagaland, and is situated at an altitude of 1,444.12 m above sea level, it covers an area of 3114 sq. km. Phek Districts consisted of 2026 sq.km of the state and practices mixed-cropping system. Terrace Rice Cultivation (TRC) is the dominant agricultural practice of both the Districts.

b). Data and Data Sources

Both secondary and primary data sources are used for the study. The secondary data have been obtained from different sources such as, Statistical Handbooks, data from the banking sector, records and reports from the Ministry of Agriculture and Directorate of Agriculture, supplemented by published and unpublished articles, journals, books, newspaper etc. For the primary data, a pre-tested comprehensive schedule questionnaire had been designed especially for the purpose and canvass in the study area. The data have been collected through personal interview.

c). Methods of Analysis:

The data are analyzed using appropriate statistical tools and technique, such as ratio and percentage. In addition to the above usual statistical measures Binary Logit Model was applied.

Logit Model

Logit Analysis is, in many ways, the natural component of ordinary linear regression whenever the regressor is not a continuous variable, but a state which may or may not hold or a category in a given classifications. When such discrete variable occurs, it is with introduction of one or several (0, 1) dummy variables; but when the dependant variables belongs to this type, the regression model breaks down. In this situation it is more appropriate to employ the qualitative data models such as binary logistic regression model. Now we consider first the case where the response y_i is binary, assuming only two values namely one or zero. The model is given by

$$y_i = \beta_0 + \sum_{j=1}^{5} \beta_j x_j + \sum_{j=1}^{2} d_j D_j + u_i$$

βs and ds are the coefficients of respective explanatory variable D_1 and D_2 are education and technology dummies respectively.

$Y_i = 1$ if j^{th} farmer is accessing institutional credit

0= otherwise

Let $P_i = E(y_i = 1 \mid x_{2i}, x_{3i} \ldots . x_{6i})$ where

P_i = probability that $y_i = 1$

$1-P_i$ = probability that $y_i = 0$

$P_i + (1-P_i) = 1$

Now we can specify the Logit model as

$$P_i = E(y_i = 1 \mid x_{2i}, x_{3i} \ldots . x_{6i}) = \frac{1}{(1 + e^{-\beta_1 + \beta_2 x_{2i} + A + \beta_6 x_{6i}})}$$

$$= P_i = \frac{1}{1 + e^{-z_i}}$$

$$\text{Where } Z_i = \beta_i + \sum_{j=2}^{5} \beta_j x_{ji} + u_i$$

This is known as logistic distribution function. P_i ranges between 0 and 1 and P_i is nonlinearly related to Z_i . P_i is not only nonlinear in x but also in the β's. This means that we cannot use the familiar OLS procedure to estimate the parameters.

If Pi is the probability of farmer being borrowed from institutional credit one, then $(1-P_i)$ is the probability of borrower being a non borrower from formal source.

$$1 - P_i = \frac{e^{-Z_i}}{1+e^{-Z_i}}$$

Therefore, we can write

$$\frac{P_i}{1-P_i} = e^{Z_i}$$

Now $P_i / (1-P_i)$ is simply the odds ratio in favor of farmer being a borrower one.

Now if we take the natural log of the above equation, we obtain

$$L = \ln \frac{P_i}{1-P_i} = Z_i$$

Where, L is the log of odds ratio, is linear in xs' and also linear in the parameters.

1.10: Scope of the Study

The present study is design to bring out a true picture of agriculture methods and its practices among the Angami and Chakhesang tribes of Kohima and Phek Districts respectively. The traditional methods of farming acquired over decade from fore parents are so deeply imprint that in many instances, we overlook ourselves amidst the prospering world. It is hope that the present study will help to introspect and contemplate the present for future prosperity both by the farming household, the policy makers and the concern implementing agencies for the productivity and profitability of agriculture sector.

The pride of self sufficiency needs to be re- appraise through in-depth empirical studies, moreover, issues on the accessibility of institutional credit, its impact and challenges face by the farmers borrowers need to be examine. Perhaps, it is hoped that the testing of institutional financial viability undertaken by the farmers would have a

wider application through the analysis of the empirical data in this study. The present work, in a modest way, would suggest some policy measures to improve the rural credit delivery system.

1.11: Limitation of the Study

Strenuous efforts are given to bring out the most appropriate information and accuracy of data on agricultural methods and practices. Yet, it is difficult to totally avoid inaccuracy and biasness. The study happens to be in no exception and it replete with instances of problematic situation where some errors cannot be possibly avoided. The farmer respondents from whom the data were collected may not reveal their exact earning and expenses involved as they do not maintain any records which set certain limitation in this study. The data and information provided by them from their memory may be the limitation. The study carefully minimizes such errors by educating the respondents about the scope of the study with all possible care and cross verification. The comprehensive enquiry schedule designed exclusively for personal interview with the farmers and cross check with the respective responsible authorities has helped this cause.

1.12: Organization of the Study:

The organization of the study is as follows:

Chapter I: Introduction

Chapter one discusses the introductory background, significance, statement of the problem, objectives, hypothesis, methodology, scope, and limitation of the study and Chapterization.

Chapter 2*:* Review of Literature.

Chapter two presents a detailed review of the existing literature on the subject and their relevance to the current study on agricultural credit both from institutional and non-institutional sources, accessibility, utilization, repayment, and other problems associated with it.

Chapter 3: **Profile of the Study.**

Chapter three expresses the profile of the state agriculture; the selected Districts and the villages under the study, with particularly emphasis on the geography, physical features,

agricultural system, demography, the socio-economic conditions, and the extent of land and resources utilization under agriculture, the cropping pattern and its contribution to the State's economy.

Chapter 4: **Agriculture Finance and the Extent of Credit Market in the Study Villages**

Chapter four describes the historical and theoretical background of agriculture finances. It also highlights on the policy programs, past achievements and challenges and the role of non-institutional sources of agricultural credit. The second part of the chapter deals with the role of institutional sources of credit in Nagaland including the non-banking financial intermediaries of the VDBs and methods of agriculture finance in the selected villages. It has analyzed on the factor determinants of institutional credit accessibility in the study villages using logit regression models.

Chapter 5*:* Impact of Agriculture Credit and its Distributional Challenges

This chapter begins with the purpose of borrowings and analyzes the impact of credit on the level of income and employment generation in the selected villages. The extent of repayment conditions and challenges face by the farmers in the borrowing procedure through the institutional sources had been discussed. Further, it is also explain the borrowers' suggestion for improving the institutional lending procedures.

Chapter 6*:* Summary and Conclusion.

Chapter six present the summary and conclusion of the thesis followed by some policy suggestions.

CHAPTER II

REVIEW OF LITERATURE

2.1: Introduction:

Agriculture is the backbone of most of the developing countries of the world, it provide livelihood and jobs to about 40% of global populations (Global Agricultural Research Partnership), feeding the world's total population of 7 billion according to 2011 census[12]. With the world population growing at the rate of 1.10% per year (2011 census), the demand for agricultural product is on an increasing rate every day. Due to increasing demand the prices of agricultural products are also on a high rise. With the advent of scientific methods of farming, agricultural production had increased considerably from 824 million tons in 1960 to 2,213 million tons during 2010[13]. However, new methods of farming requires huge amount of money. Now, to speed up the agricultural productivity, credit is considered as a catalyst agent of growth.

In India, scientific method of farming was introduced during the green revolution of the mid 1960's. The food grain productions increases from 82 million tons in 1960-1961 to 176 million tons and 216 million tons in 1990-91 to 2006-2007 respectively (Economic survey 2006-2007), using High Yielding Variety of seeds and the implications of fertilizer modern tools and equipments. All these breakthroughs are made possible with huge public investment in agriculture sector. Ever since then, Government policies in financing agriculture gain momentum and institutional sources of credit are arranged to meet the increasing needs of our farmer especially to the small and marginal farmers in the rural areas of the country. However, inspite of deliberate effort on the part of the government and the private financial institutions to meet the requirement of the rural people, the regional disparity across the country in the allocation of finances is resounded simultaneously.

Perhaps, along with several advantages of improving the agriculture production from borrowing, there is also the problem of debt burden leading to unpleasant

[12] . www.worldometers.info/world-population
[13] . www.earth_policy.org/datacenter/pdf/book-wote_crops.pdf

consequences. Hence, credit as a tool of increasing agricultural production is a difficult matter to conclude. The review of literature in the following paragraph will give a better evidence of the subject matter.

2.2: Studies relating to Agriculture Credit: The Indian Experience

There is a plethora of literature on the methods of agricultural practices and its finances in India. This section briefly discuss part of literature restricting attention to those papers dealing with agriculture credit in various parts and pockets of the country, with multiple range of effect and consequences at the same time which suggest better policy options and measures for higher agriculture productivity.

Long F Millard (1968)[14] basis objective of the article is taken out from Schultz's thought of traditional economy that labour is not plentiful in agriculture as assumed by several authors. The basic idea revolves around as to why peasant borrows at high rate of interest even, when the rate of return on capital is low. For those temporary adversity and those with good opportunities, but limited wealth of their own borrowing will be a better solution. However, if the farmer possesses wealth, but lack managerial talent is likely to remind poor. The permanent poor are those who have least investment opportunities.

The author examined the question of exploitative rates of borrowing in India and Thailand and found that monopoly in the credit market exists but limited. During 1951-52 the small and medium farmers are the least invested group; the large/big farmers have better privileges in adding to their capital stock. Out of the total percentage borrowed, the small farmers invest only about 23%, while about 60% of the borrowed amounts are used for family consumption. Moreover, only a few farmers had the kind of opportunity to justify substantial investment. Perhaps there is also diversity among the traditional agriculture to made frequent adjustment to variation in weather, market conditions and family circumstances. Providing loans along with other inputs will better the lots of the farming community.

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[14]. Long F Millard (1968), "Why Peasant Farmers Borrow". *American Journal of Agricultural Economics. Vol.50, No.4(Nov.1968) pp. 991-1008*

In a study to assess the productive investment of agriculture credit in Baroda districts of Gujarat, **B.M Desai and D.K Desai (1970)**[15] found that there is a serious need to reallocate the existing credit plan and to lay strong emphasis on the productive role of credit to agriculture farmers. The financial inadequacy derived from the fact, that; the borrowing farmers have the tendency to misuse the borrowed capital for their own personal uses rather than for the productive investment. In order to avoid such wasteful spending habits of the farmer, it is the supplier to impose stringent rules only for purposeful lending.

The objective of the study done by **Tewari S.K and Sharma, J.S (1979)**[16] is to identify the pattern of credit flow to agriculture sector through the bank branch expansion program in rural areas of India. The total advance of the commercial bank to agriculture was only 1.8% during 1968, and rose to 13% in 1975. After the nationalization of banks in 1969, there is a change in the pattern of flow of credit to agriculture, mostly in the form of direct finances. It has increased from 32% to 75% in 1968 and 1976 respectively. Prior to the nationalization of bank about 2/3th of the loans are given in the form of indirect finances.

Out of every 100 new branches open by commercial bank, during the late 1960s to mid 1970s, 47 branches are located in the rural areas. This was done to encourage the rural farmer to adopt new and scientific methods of farming through institutional finances. However, the flow of credit to small and marginal farmers consisted of only 17%, while the large farmers comprises of 62.3%. The reasons sought for this meager share of the small and marginal farmer is that land is taken as the conventional security approach and obtaining 3rd party guarantee by the banks.

There is also high disparity in the flow of agricultural credit across the region of the country. In 1976, the southern region of the country has the highest availability of agriculture finances per hectare amounting to Rs 157 crores, while the north eastern region with only Rs 16 crores. This unevenness is due to the structural weakness, poor

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[15]. Desai, B.M and Desai, D.K (1970), **"**Is Inadequacy of Institutional Credit a Problem in Changing Agriculture?" *Economic and Political Weekly.* Vol.5, No.39, (Sept.26,), pp. A101-A110.

[16]. Tewari, S.K and Sharma, J.S (1979), "A Critical Appraisal of Nature of the Flow of Bank Credit to Agriculture". *Financing Agriculture*, Vol. XI, No.1, pp.8, April-June.

infrastructure, lack of banking habit of the people and lack of awareness among the rural masses.

Sastry, S.K (1979)[17] made an assessment of the agricultural credit requirement in Andhra Pradesh, through timely supply of credit to all needy and eligible farmers. It aims to provide credit at an equitable and reasonable rate of interest. The ultimate target is to improve the overall agricultural productivity. It was found that a careful designed to channelized and dispense credit to the needy farmer is essential, so that it attract customers as well as repayments are ensure.

The study found that land is offered as the basic of security; hence a proper documentation on land holding and its value is maintained. This can ensure how much a farmer borrowers can borrow. The study also suggested for a Board of Agricultural Credit with members from the Credit institutions, the department of agriculture and a few competent farmers for the better implementation of credit delivery as well as repayment system.

Bardhan, Pranab K (1979)[18] examines the impact of agricultural development on the incidence of tenancy. The evidence of the time series suggest a falling incidence of tenancy along with agriculture progress, but suggest that agriculturally better off regions have larger proportion of area under tenancy. The comparative static proportion results that the percentage of area under tenancy is much higher in areas, where land improvement factors such as soil fertilizer, rainfall, irrigation etc. is better off.

Therefore, the larger the degree of imperfection in the market for inputs is complementary with high yielding variety of seeds; the lower is the percentage of area under tenancy. The larger the labor-intensity of the crop harvested, the higher is the percentage of area under tenancy. It was found that the percentage of area under tenancy will be smaller in areas with higher interest rate on credit and larger the extent of unemployment facing landless household, the higher the extent of tenancy.

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17. Sastry, S.K (1979), *"Agricultural Credit"*. The Farmers' Welfare Trust Hyderabad
18. Bardhan, Pranab K (1979), "Agricultural Development and land Tenancy in peasant Economy: A Theoretical and Empirical Analysis. *American Journal of Agricultural Economics.* Vol. 61, No.1 (Feb.1979); pp. 48-57.

Rao V G et al. (1980)[19] identified agricultural credit as the most effective methods of inducing technological method of farming in the agriculture sector. The short term loan enables the farmers to purchase seeds, fertilizers, pesticides and inputs. The medium terms loans are for procurement of implements and the long terms loans induces for acquiring new land etc. Inspite of many advantages and credit facilities available the farmers are reluctant to borrow due to his attachment in the traditional practices and risk aversion in taking up new methods. It is also found that there are misconceptions about borrowing among the rural farmer that it leads to debt trap, discourages thrift and encourages lavish.

Besides, the small farmers in India are in a more serious position in obtaining loan due to procedural difficulties, location of the banking branches, and no knowledge or no previous experience about loans facilities for agricultural improvement. The borrowing farmers are in favored position about the simplification of banking procedure, low interest rate, extending the repayment periodicity, and expanding of bank branches.

Barry, Peter J. et al. (1981)[20] made an analysis to find the concept underlying the farmers credit risk and on how credit risk influences farmers debt. It also attempt to evaluate empirical evidences and develop alternative methods of measuring credit risk. It is the farmers' reliance on credit as liquidity introduces the risk and in terms of lenders response to changing condition. The changing agriculture situation in turn influences the lending decision of the financial institution and consequently farmers' credit risk is added. As a result the concept of credit risk must be accounted for in the farmers total portfolio risk and in the analysis of risk and liquidity management. The practical implication for credit risk depends and varies upon the characteristic of specific farm situations.

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[19]. Rao, V.G and Malay, Paramjit (1980), *Role of Commercial Banks in Agricultural Development*. Ashish Publishing House New Delhi.

[20]. Barry, Peter. J; Baker, C.B and Sanint, Luis R (1981), "Farmers' Credit Risks and Liquidity Management*". American Journal of Agricultural Economics,* Vol. 63, No.2 (May, 1981), pp. 216-227.

Pande, P Dinaker and Joseph Viruthiyel (1983)[21] brought out the role of institutional and non-institutional agencies in providing credit to the rural people of Ghaziabad district of Uttar Pradesh. The study is based on the village level consisting of 522 household which were categories on the basis of land holding and income. It was found that the marginal farmers were holding only 15% of land and the large farmers shared 40.1% of the total land holding. This marginal farmer owned a debt of 4.8% under institutional sources of credit, while their share under non-institutional sources is as high as 18.9%. The large/big farmers' debt from institutional source is 59.2% and 2.8% from non-institutional sources.

The alarming high rate of debt among large farmer from the banking institutions is their accessibility to financial institution, due to the advantages of large size land holding besides several other reasons. The low debt rate among the small and marginal section of the people is the direct indicator of less borrowings from the financing institutions. The loans from the institutions sources are at a much lower rate of interest and therefore arrange particularly for the sections. However, due to complication in borrowing procedure and the size of land holding as a direct proportion of borrowing divert from fulfilling to the needs of the small rural farmers.

The author **Kurulkar, R. P (1983)**[22] brought out the detail aspect of long term credit delivery system in the backward region of Aurangabad. A farmer seeking for long term credit is to fulfill certain criteria, such as certificate requirements, lengthy administrative procedure etc. In the process, the significant of credit money to some extent is lost, as it is very difficult for illiterate borrowers to go through the long process. However, from the supplier side the determination of the quantum of loan lending has become a matter of concern too, especially in loan repayment.

The short term and medium term credit are provided from the agencies such as the District Central Co-operative Bank, the Panchayat Samitis, the Taccavi Loans of the State Government, and the unlicensed Village-Money Lenders. Out of 155 sample borrowers from the District Central Co-operative Bank, 17% could not avail short term

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[21]. Pande, P Dinaker and Joseph Viruthiyel (1983), "Institutional and Non-Institutional Credit and the Rural Poor". Financing Agriculture. Vol.XV, No. 1, Jan-March, pp.37-44

[22]. Kurulkar, R.P (1983), *Agricultural Finance in a Backward Region*. Himalaya Publishing House; Bombay, 1983.

credit, 30% of the cultivating class obtained short term inputs from the Panchayat Samiti. However, considering the total credit lend out, the large farmers had its share of 73%, while the medium farmer groups has its share of only 23% from the Panchayati Samiti. The Taccavi loan provided but the state government through Land Improvement Loan showed an inadequate and untimely disbursement of loan. However, it was found that the small farmers had received more Taccavi credit than the large farmers. Under the unlicensed village money lenders, the large farmers has an upper hand in obtaining the loan, consisting of 54% while the medium group of farmers with 26% out of the total 155 sample surveyed during the study period from 1973-74.

Hans Dieter, R. M (1983)[23]**,** assess the potential of agricultural surplus production and the characteristic of traditional credit market in Dhanbad district of Bihar. It was found that the issues concerning the potential of agricultural surplus are at stack. The surplus sector is usually from the low-man-ratio and is determined by the household income.

Other factors such as unequal distribution of land, unequal earning opportunities from supplementary off-farm income, and social and educational status also plays an important role in the determination of income differences. Nearly 77% of surplus is used for private consumption rather than for further productive investment. Besides, the agricultural lending system is mostly control by the influential section of the society, who holds the village administration and the co-operatives. Therefore the traditional credit market is characterized by the supreme control of a few individual, who exercises power according to their own needs and self-centered end.

In this article **Sarap, K (1986)**[24] examined three aspect of rural credit i.e. the participating pattern by different classes of farm household, the collateral security of the term of the loan, and the rate of interest charged. It was found that the informal source of credit is a common practice among the poor farm household. Under the informal lending, the interlocking markets are the main collateral security or pledging valuable assets like gold, land, transferable assets, future labor services and even repayment in

[23]. Hans Dieter, R. M (1983), *Indian Money Lenders at Work: A Case Study of Traditional Rural Credit Market in Dhanbad District in Bihar,* Manohar publications.

[24]. Sarap, K. (1986), "Transaction in Rural Credit Market in Western Orissa, India". *Journal of Peasant Studies.* Vol.15, No.1, Pp. 83-107.

kind after harvest. The poor households have no satisfactory access to formal credit. He found that the relation between the moneylender and the borrower in an informal credit market as a form of exploiting the less powerful agents, which resulted out of the dependency of borrower regular needs of loans for survival. Whereas, the rich farm households have access to both formal and informal sources of credit. This form of exploitation will continue to interrupt as long as the borrowers remain insufficiently poor and without any alternative and dependable source of borrowings. The rate of interest is usually high and there is no uniform rate of interest in the informal lending. Non credit intervention in the form of effective public distribution and other investment for the rural poor would reduce the informal borrowing for unproductive purposes.

Desai, R.G (1988)[25] considered the importance of evaluating/ assessing the impact and performance of the farmers' societies and for agricultural development. "In Indian agriculture about 74.5% of the operational holdings falls in the category of small and marginal farmers and the primary responsibility for the development rest with the government because it needs a colossal public expenditure and strong public intervention" (Dantwala1988). Keeping this in mine, the policy makers of India had given special emphasize in giving preference to the small and marginal farmers. The magnitudes of credit requirements for crop production are streamlined through the Small Farmers' Development Agencies (SFDA) and the Integrated Rural Development Programme (IRDP). Moreover, it has recommended for an effective and special interest of every member's needs in the farmers' service societies by the higher authority.

Bose, S (1994)[26] asserted credit as the strategic point to address the agrarian economy. Cultivation in India was traditional with no innovation. He examined and found that there is widespread poverty and mal-nutrition, but the colonial rule did little to take care of the situation. Instead, successive British empires tried to improve the productivity of agriculture only to extract higher revenue. The first step to develop the Indian agriculture sector was taken by the British government in 1869, which was actually guided by the needs of raw cotton in India for Lancashire Textile Mills. However, with the significance of credit, there is also the problem of debt. Clive Dewey wrote, 'debt was allied to prosperity and poverty alike and that, while its existence was

[25]. Desai, R G (1988), *Farmer Societies and Agricultural Development*. Chugh Publications, New Delhi.
[26]. Bose, Sugata (1994), *Themes in the Indian History; Credit Markets, and the Agrarian Economy of Colonial India.* Oxford University Press.

due to poverty, its volume was due to prosperity'. It was found that Punjab which is agriculturally the most prosperous province in India is also the most indebted (Malcolm Lyall Darling)[27].

Debt problems predated colonial rule but it seems to have compounded under the colonial rule. Several reasons such as small size of land holding, the peasants' constant and recurring losses due to natural calamities and epidemics, his ingrained improvidence which gets aggravated due to insecurity of crops and his extravagant expenses on domestic ceremonies and marriages etc. In addition, borrowing are make available to the farmer through the easy accessibility of the moneylenders and his vicious system of business, and the great expansion of credit due to high prices and increasing value of land.

Singh, et al. (1995)[28] identifies credit as an important tool, and a catalyst which plays a pivotal role in the transformation of agriculture from the subsistence farming to commercial farming. It helps the farmer to adopt capital-intensive technology. However, credit distribution is uneven across region. The Agricultural Credit Review Committee (ACRC 1989) brought out that only 30% of the rural families demanded for and have access to institutional credit system. There is serious problem of overdue such as diversion of loans for domestic purposes, the high consumption expenditure, lack of effective supervision on the banking officials, expenditure on social ceremonies, natural calamities.

Effective policy tools by providing loan for specific purposes and suitable scheme for extending rebate in interest rate needs to be considered to curb overdue. Concessional rate of interest should be revised suitably to improve viability. Also, periodical analysis of the project along with suitable legislative measures for setting up bank tribunals for speedy recovery of the overdue would be a rescue.

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[27]. Darling, Malcolm L (1905), Punjab Peasant in Prosperity and Debt. *Oxford University Press*.

[28]. Singh, CB, DeBoer, A.J, Patil, B.R and Rai, S.N (1995), " Farming Systems Research and Extension for Livestock and Crop Residue Research and Development-Some Experiences. In Singh C.B, Rao S.V.N and Jain DK (eds),Kamal India.

Kochar, Anjini (1997)[29] made an assessment on whether the production decisions of the farm household are affected by lack of access to formal credit. It was built on the frequently argue hypothesis that rural development originate with agriculture credit reforms. Taking the data from the Government of India, the All-India Debt and Investment Survey for 1981-82 and pertaining to rural households in the Northern State of Uttar Pradesh, the author conclude, there is little empirical evidence that productions are limited by formal credit. However, reforms on inputs market have larger impact. The empirical results revealed those households assessing formal credit are usually those with larger ownership of irrigated land.

There is no evidence that accessing formal credit affect either the amount of land leased or tenurial status. It is suggestive that lack of access to formal credit does not constraint household in their working capital requirement. However, it suggest strategy which relaxes restriction on credit and tenancy market that provide land security will yield better benefits to the cultivating farmers than solely emphasizing on formal credit supply.

Anand, J.S (1999)[30] examined the overall performance of Co-Operative Agriculture and Rural Development Bank in meeting the long term requirement for the rural people of Kerala in the district of Thiruvananthapuram, the extent of credit utilization, the repayment condition, and its impact. The study concluded that the long-term credit is of supreme importance for the permanent improvement of land and the adoption of modern technique of agricultural farming. The agricultural credit has its maximum impact in the minor irrigation and also shows a significant increased in the total income of the borrowers. It has proposed that the political advantages and the lackadaisical attitude of the government officials should be done away with and a more target group oriented approaches, coupled with the sincerity and response of both the financing agency and the respondent will lead to a successful development.

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[29]. Kochar, Anjini (1997), "Does Lack of Access to Formal Credit Constraint Agricultural Production? Evidence from the Land Tenancy Market in Rural India". *American Journal of Agricultural Economics*, Vol.79, No.3 (August 1997) pp. 754-763.

[30]. Anand, J. S. (1999), *Co-Operative Agricultural and Rural Development Banks.* Atlantic Publisher and Distributors, New Delhi.

Mujumdar, N.A (1999)[31] objective of the study here is to identify and reform the existing structure of the credit delivery system rather to just increase the flow of credit to the rural agricultural sector. The author feels that banking reforms does not merely means the computerization of banking sector, but viabilities through priority lending for productive purposes to the small borrowers be emphasis along the way. The broad objective of poverty alleviation should be linked and exercise through the parameter of rural credit lending to agriculture sector. In order for this to materialize the twin problems of high cost of transaction cost and poor repayment performance should be tackled. The NGOs and the SHGs can be channelized to financial institutions as innovative modalities to reduce transaction cost and ensured repayment performance.

The policy makers should be sensitized in transforming rural credit delivery system. Likewise, the mindset of both the policy makers and the implementing authorities of the banks should be change to the ground realities of rural problems. Dedicated and trained bank personnel with field experiences should be recruited for the job. Therefore, it is necessary to regulate and strengthen the existing structure of the rural finances to a workable solution.

Reddy, A. Ranga (1999)[32] made an enquiry into the causes of agricultural credit in the district of Guntur in Andhra Pradesh. He also pointed the feasible measures to reduce the rising overdue. Several reasons for imperfect market conditions in the rural areas such as immobile resources, poor communications, sparse and absence of accurate information are pointed out. Government policies are sometimes biased and in favor of certain groups and monopoly power possessed by the rich and wealthy few farming community which often leads to the neglect of small and marginal section of the society. The domination of the few large farmer and upper strata of rural society influences the flow of credit as well as its repayment. Numerically, the small and the marginal farmers consisted of a much larger section of society, however, their voices are limited and unpopular in such affair due to limited stake they have. Moreover on the demand sides, the World Bank pointed out reasons such as the failure of the farmers to

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[31]. Majumdar, N.A. (1998), "Credit Support to Priority Sectors. A Macro Perspective", *National Bank News Review,* January-March 1998, pp. 6-10.

[32]. Reddy, A. Ranga (1990), *Agricultural Development Rural Credit and Problems of its Recovery.* Mittal Publications, New Delhi-110059(India)

use the borrowed money for production. The failure for the productive investment leads to accumulation of over dues, thus bringing about the refusal to repayment.

The author found that the measures to reduce the rising over dues is directly related to the causes, hence strict supervision over utilization of credit and recovery campaign against willful defaulters has to be check. The mounting overdue, adversely affect the recycling of credit and erode the financial stability. It deteriorates the liquidity and become a dormant unit at the hand of the default borrowers.

Shajahan, K.M (1999)[33] examined to see if the expansion of priority sector lending result in the greater availability of credit needs. There was marked improvement in the loan portfolios of PSBs in the category of priority sector lending. Under the priority sector lending, indirect finances are extended to State Electricity Board (SEBs) in 1997-98 under special agriculture (SI-SPA) of Rural Electrification Co-operations (REC). In order to process the lending of priority sectors, Rural Infrastructure Development Fund (RIDF) was setup to see that various types of rural infrastructure project are finance for completion in appropriate time. The result indicated the underutilization rate of 37% during the period from 1995-96 to 1998-99.

The study by RBI concluded that high proportion of NPAs is attributed to the directed and pre-approved nature of loans sanctioned under sponsored programmes and the absence of security and lack of effective follow-up due to large no. of a/c, lack of legal recovery measures not being cost effective and repayment habit and culture of the borrowers.

Sangwan, S.S. (2000)[34] analyzed the demand for credit and to evolve appropriate condition of credit flow from the banking institutions. 55 tenant farmers from the two district of Haryana are selected with three Primary Agriculture Co-Operative Societies (PACs) for each district to find out the factors affecting leasing-in and leasing-out of land, the terms and condition of leasing and the assessment of credit demand. It was found that the small size of land holding, lack of alternative employment and the availability of labor and machinery are the determining factors of

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[33]. Shajahan, K.M (1999), "Expansion of Priority Sector Bank Lending: How Useful?" *Economic and Political Weekly*, pp. 3572-3574.

[34]. Sangwan, S.S (2000), "Emerging Credit Demand of Tenants in Haryana". *Indian Journal of Agricultural Economics,* Vol.55, Issue.3 (July-September 2007), pp.317.

land leasing-in. Out of 55 sample tenant, about 65% are small famers and 80% owned machinery and 44% have excess family labor.

One condition of leasing-in is the mode of payment mostly on fixed money with 71% of the sample tenant on fixed rent and fixed produce released in advance after the harvest respectively. There is consistency of tenants with 91% of farmers practicing for atleast 5 years crop sharing. The study concluded that tenant farmers requires fund not only for production expenses but also for fixed rent payment and consumption requirements, besides expenses for purchases of inputs.

Dasgupta, R (2001)[35] brought out a critical review on the recommendation of rural and agricultural credit by Narasimham Committee of 1991(NCR I), D R Mehta Committee (DRMC) 1993, Narasimham Committee of 1997(NCR II) and suggest corrective measures through R V Gupta Committee (RVGC). The greatest stimulant for the growth of non- agriculture economy in rural area is the sustained agricultural growth and the objective of agriculture credit is to achieve anticipated growth rate in agricultural production and employment. RVG committee's recommendations are broadly classified as approaches to credit management and operational aspects. The committee recommended for extension of loan coverage to all aspects of agriculture throughout the season and areas including agriculture markets. And for this a mutual relationship to materialize between lenders and borrowers has to be developed and operational aspect has to be modified as per needs of the borrowers.

The loan margin to small borrowers should be removed and the documentation of loan is to be simplified. Likewise all agricultural loans should be given in cash. It has also recommended for lower rate of interest and priority to be given to farmers for procurement. The Self Help Groups (SHGs) are to play an important role to take care of the large number of small farmer and the implementing authority should emphasis on the internal supervision and monitoring to the grass root level. Besides other things borrowing farmers should be rewarded if repayment of loans are done in time and create more opportunities for borrowing in the future.

[35]. Dasgupta, R (2001), "Rural Banking and Credit: Tale of Many Committees". *Economic and Political Weekly.* Vol.36, No.9 (March 3-9), pp.733-737.

Gulati, Ashok and Bathla, Seema (2002)[36] examined the financial health of the banking institution to see if the existing policies are effective enough to bring about a change of growth to the agriculture sector and to suggest micro finance on international basis to our system of agriculture economy. The rural financial systems is faced with unsustainable financial problem like the Non-Performing Assets (NPAs), high transaction cost, the problems of overdues leading to low financial margin and inability to mobilize speedy disbursement of credit because of cumbersome procedures and formalities etc. During 1980-1993 the mounting loan outstanding grows at an annual average rate of 5.47% in rural financial institutions. For the smooth functioning of any lending institution, the recovery of loan is the most important for mobilizing it further.

In many cases in rural areas, the loan repayments are low due to factors such as high transaction cost with low financial margin. The high transaction cost are summation of staffing pattern, the location and distance of the banking branches, the nature and volume of business credit deposit ratio, the pattern of deposit, the volume of loan outreach , the number and size of loan disbursed, the margin to cover cost of funds as well as expenses in sanctioning and supervisory mechanism.

The factors behind default rate are categorized as external factors and internal factors. The external factors are such that inadequate income generation and factors contributed by other sources, the natural calamities, mismatch of time between credit delivery and production period. Moreover there are also equally contributed by faulty government policy on debt relief and even inadequate grace period in case of long period investment project. The defective assessment of loans and inefficient supervision on timely actions are the internal factors for low recovery of loans.

The collective experienced of the bank-SHGs in many eastern Asian countries affirms great success and suggest enormous potentials in India through micro finance. It is recommended for channeling credit through banking financial investment inputs supplier and output dealer, traders, money lenders or other informal agencies existing in the rural areas. Besides, it has also proposed for operationalize cluster approach in

[36]. Gulati, Ashok and Bathla, Sema (2002), "Institutional Credit to India Agriculture; Defaults and Policy Options". *Occasional Paper-23, National Bank for Agriculture and Rural Development*, Mumbai.

which super market structure for agriculture farmers be evolve and form linkages among other key intermediaries in agriculture business.

Hanumantha Rao, C.H (2003)[37] examined the causative factors for the failure of macro-economic policies of agriculture in the post reform period. Its objective is to spell out defective policies and suggest measures for a productive reformation of the system. Restriction on domestic trade and processing should be removed and feasible MSP for agriculture product should be frame and for which agriculture and research extension services are encourage. Effort should be put to conserve land and water resources by developing better watershed development and Joint Forest Management (JFM). The author is of the opinion that the success of implementing government policies for agriculture sector depends on effective functioning of the village Panchayati Raj at the grass root level, and it is also necessary to persuade the state to devolve power to the panchayat.

Srinivasan, G (2003)[38] identifies that NABARD has made a tremendous job in the development programmes of the rural areas. Since the setting up of NABARD (1982) till 2006, the total loan lends out amounts to Rs 140000 crores. However, the study found that 63% lend-out is used for consumption purposes with only 37% going for productive purpose. High rate of default payment due to non-productive investment hinders the smooth delivery of credits. NABARD also had started with its innovative methods of reaching the rural people through Self Help Group (SHG). It has given considerable flexibility and priority, responding to the needs of the local conditions. Till 2006, there are 71400 SHGs throughout the country working in direct linked with the banking system. An innovative and a proper synergy to the existing credit delivery are necessary to cope with the unmet needs of our farmer to feed the ever rising population as well as to generate an exportable agricultural surplus.

Bhaumik, S.K and Rahim, A (2004)[39] brought about the structure and operational issues of rural credit in the two districts of Hooghly and Bandura in west

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37. Hanumantha Rao, C.H (2003), Reform Agenda for Agriculture". *Economic and Political Weekly*. Vol.38, No.7 (Feb.15-21, 2003), pp.615-620.
38. Srinivasan, G (2003), " Rural Credit Delivery; Reaching the Unreached", *Kurukshetra, Vol. 51, No.1,* pp.10-11
39. Bhaumik, S.K and Rahim, A. (2004), "Structure and Operation of Rural Credit Markets: Some Results Based on Field Surveys in West Bengal". *Journal of Rural Development*, Vol.23 (1). pp.1-30.

Bengal. They examined the nature of participation among the different household in the credit market, the distribution of both formal and informal loans, its borrowers, the terms and conditions of credit contract, its determinant and the actual cost of borrowing, especially in the formal sector, and the gap between actual credit requirement and its availability. It was found that 98% of informal borrowers are the agricultural laborer. Loans are lend-out on some collateral securities and even land mortgages. Most of the informal lending are repay back after harvest and in kinds which make it convenient for the rural farmers to borrow at their will and wants.

Access to formal credit depends on the area of the farm, the caste status, educational level or the awareness about the facilities available, the workers' dependency ratio, and the use of modern input etc. The measure of formal credit availability and its requirement indicate a shortage of credit among the small and marginal farmers and a relatively better credit support to the medium and large farmers by the institutional agencies.

Ghosh, D.N (2005)[40] was concern over the declining rate of agricultural lending to the total lending of the country and suggest measures to enhance the bank lending to agriculture sector to face the tough competition. The ratio of agricultural credit had increased from 5.4% in 1970s to 8.7% in 2001-02, but it share to the total credit of the country declined from 20.5% to less than 10% till 2003.

A comprehensive credit planning and monitoring with proper guideline and rules is require in the country, so that a balance growth of credit lending is achieve in the entire sector. It had emphasis on to refine the targeted group of the society with advisory committee at each rural bank consisting of the local representative. The policy focuses broadly on two areas such as the range and quality of agriculture extension services, the kind of responsibilities of the banks in meeting the credit requirement in rural areas of the agriculture sector with clear and reflective strategies of the farming community. Agriculture service extension can be improved through agricultural marketing, agriculture product pricing insurance and documentation. Credit worthiness

[40]. Ghosh, D.N (2005): "A policy Approach for Agricultural Lending". *Economic and Political Weekly*, January 8, 2005, pp. 93-96.

can be achieved through creative design with innovative methods to agriculture lending at a sustainable cost.

Basu Priya (2006)[41] objective of the study is to improve the accessibility of finances to the rural India. The survey covers 6000 household depending on non-farm income across Andhra Pradesh and Uttar Pradesh in India. For the financial institutions to serve to the needs of the rural poor is a high-risk, high-cost proposition due to uncertainty about repayment whose income is volatile and expenditure pattern oblivious. Therefore in order to create a 'financial climate' is a big task.

The writer suggests formal-sector institutions to introduce products and services that are not only reliable and available on a continuous basis, but are also flexible and convenient for the rural poor. It is also recommendable to introduce measures that allow for low-cost ways of reaching the rural poor with simplified procedure, better staffing policies with door step banking through technology. It is advisable to review the rate of interest and revisit the priority sector lending. Providing appropriate information about credit will not only increase the members of borrowers, but will reduces transaction cost in the long run. Importance should be given to the demand side to smoothen out the gap between the suppliers and demanders in micro finances.

Tripathy, K.K (2006)[42] main objective of the study here is to address to the inherent issues of poor recovery and the rising overdue due to Non-Performing Assets (NPAs) in the hand of the borrowers. In the light of this, the study suggests measures to make cooperative to improve its viability of credit delivery to the rural areas in the emerging competitive scenario. Since, the tenth plan period (2002-2007), recapitazation and revamping of cooperative credit structure was launched with the major objective to reach the small and weaker sections in the rural areas. It had also suggested diversification of loans for venture of new profit, so as to avoid non per-performing and dormant asset. Democratization and professionalism are suggested as the need of the

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[41]. Basu, Priya (2006), *Improving Access to Finance for India's Rural Poor*. The International Bank for Reconstruction and *Development, the World Bank Washington DC.*

[42]. Tripathy, K.K (2006), "Trends and Issues in the Access to Agricultural Finance in India: Review of Micro-Finance as an Innovation of Credit Delivery Mechanism". http://www.scholar.google.co.in/scholar?q=k.k+Tripthy+recovery&btnG=&as_std=0%2C5&as_vis

hour, to ensure member driven and economically viable with efficient risk management, safeguarding market imperfections, and high recovery ratio.

Thorat, Y.S.P (2006)[43] present "production and productivity of agriculture" as the theme of the paper which is possible through the sufficient provision of credit. Credit expansion to the rural people can be achieve by emphasizing on the following strategic pillars, such as extension of institutional lending, direct lending to disadvantaged sectors at a lower interest rate. India is a rural agrarian country with 70% of the population depending heavily upon agriculture, and institutional credit is perceived as a powerful tool for enhancing production and productivity and for poverty alleviation in the rural areas. Issues such as the competition in search for higher returns, divert the commercial banks to look for profitable avenues of lending. Though the coverage of finances for the excluded section of the population is supported by the government sponsored schemes, the target of the weaker section remains low. Procedural and documentation hassles needs to be tackle to ensure affordable credit at an appropriate time with adequate measures.

Sindhu and Singh (2006)[44] argues that agricultural credit in itself is not an input but helps in creating environment for the adoption of modern technique of production and encourages private investments of the farms. Timely increase in the supply of institutional credit to the needs of our farmer has been emphasized by the National Agricultural Policy, and more than 92,000 primary agricultural credit societies are established in the country. However, these are unevenly spread across regions. The imbalance between the production and the post-production credit needs to be rectified and flexibility in the loans to reduce the cost of transaction.

Some issues are pointed out such as the high cost of transaction especially to the small and marginal farmers, economic viability and recovery of loans in agricultural sector is poor. Also a large number of rural poor remained outside the fold of formal banking system. They determined to increase the flow of agricultural credit and accessibility to the poor, disadvantaged and less developed region to ensure economic viability through a wide network of rural banking operation.

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[43]. Thorat, Y.S.P. (2006), "Rural Credits in India: Issues and Concerns". *Indian Journal of Agricultural Economics*, Vol.61, No.1, pp. 1-10.

[44]. Sindhu & Singh (2006*),* "Agricultural Credit and Indebtedness in India: Some Issues". *Indian Journal of Agricultural Economics*, Vol.61, No.1, pp. 11-34

In this paper **Satish, P (2006)**[45] brought out the extent of institutional credit growth, the issues and problem associated with the rural indebtedness in the region of Punjab. During the 1960s of the green revolution, Punjab had witnessed that there was a considerable growth of institutional credit at low rate of interest which infact was the reason to wean away the informal source of lending in the state. The increased in the total flow of institutional credit had witnessed along with an increased in the number of borrowers at 1.31% per annum during 1979-80 to 1994-95. However, inspite of that Punjab had also passed through a period where there were several cases of farmer suicide in the rural areas during 1995-98 which was a major concern to the state.

The indebtedness was attributed mostly due to excess expenditure on domestic consumption and social ceremonies, besides high input prices and crop failures. The author in his intensive effort to reason out the relationship between indebtedness and farmer suicide discovered the interface of socio-economic and psychological factors rather than the agriculture stagnation alone. The study has suggested for a viable technological knowhow into the agriculture sector, in the mean time to propagate responsible quality control, effective investment plan along with proper social infrastructure for a civilized human resource development capacity.

Sahu, Gagan Bihari and Rajasekar, D (2006)[46] objective of the paper is to evaluate the flow of credit to agriculture sector and the factors associated with it. The authors established that the government introduces several policy of agricultural lending at a concessional rate of interest with the rationale behind to help farmers to adopt new technological methods of farming, as agriculture is a risky activity that cannot be predicted and avoided at times. However, many factors are responsible to its failures. The agriculture lending set by government are lower than the commercial and industrial rate, hence the financial institution could not cover the cost of their agriculture lending. The pre-occupation of the financial institution had obviously led to a declining rate of agriculture lending, hence, the qualitative aspect of agriculture lending with the mounting over dues becomes a threat.

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[45]. Satish, P (2006), "Institutional Credit, Indebtedness and Suicide in Punjab". *Economic and Political Weekly*, Vol. 41, No 26(Jun-30 Jul 7 2006), pp. 2754-2761.

[46]. Sahu, Gagan Bihari and Rajasekar, D (2006), "Banking Sector Reform and Credit Flow to Indian Agriculture". *Economic and Political Weekly*, Vol.40, No.53 (Dec.31, 2005-Jan. 6,), pp.5550-5559

Moreover, the small farmers are left out of the fold, whereas the rich and the better off farmers had advantage. The inability of the financial institution to access the feasibility and viability of the borrowing farmers led to incur losses. It has suggested that a reduction in the cost of lending, transaction cost can reduce the credit subsidy and strengthen the quality of credit quality and credit delivery system in the country.

In this article, **Bhupat M. Desia (2006)**[47] critically examines the RBI expert committee group on investment credit to agriculture. Different expert committee on investment appointed by the RBI emphasizes on the development of technology, production, credit, marketing and processing infrastructure as a policy instrument and gives little attention to inputs like HYV seeds, organic manure, fertilizers, irrigation-water, labor etc. These assets are acquired for realizing long term potential by augmenting natural resources and enhancing efficiency use of existing resources which in the long run generates income. Perhaps, the concept of total productivity growth as a prime mover of efficiency of resource endowment is not given prior importance.

It had suggested for doubling agriculture credit with legal support for updating the use of information technology for accessing the land records, appropriate legal amendment on land ownership and suitable change in revenue act and loan recovery with the panchayat assistance in the North Eastern Region of the country.

Reddy, D Narasimha (2006)[48] attempt to bring out the agrarian structure on the eve of economic reforms, the conditions and the challenges of how the peasantry had gone through the green revolution in Andhra Pradesh. There is a growing dependence on modern methods of farming, a stage of transition from traditional farming to High Yielding Variety of seeds (HYVs). The new methods of farming necessitate more sophisticated knowledge based, timely and comprehensive extension systems and services strategy. Andhra Pradesh experienced through a series of crisis during the 1980s in which the budgetary expenditure to agriculture was declining, the agriculture

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[47]. Desai, M. Bhupat (2006), "Investment Credit to Agriculture". *Economic and Political Weekly.* Vol.41, No.8 (Feb 25-March 3), pp. 693-696.

[48]. Reddy, D Narasimha (2006), "Economic Reforms in Agrarian Crisis and Rural Distress". 4th Annual BJR Memorial Lecture.

research education was ignored and the agricultural extension services are neglected. The consequence was the report of several farmer suicides across the state.

The author pointed that, this is a cruel paradox as the country proclaimed itself as self-sufficient, and the policy makers have design about high agricultural export. But the farmers who are the supplier of agricultural products are allowed to die of distress. Policy should be design to the vulnerable section of the society targeting the small and marginal farmers. Adequate provision through institutional credit extension services to the rural farmers need to be emphasis. There is a need for a shift of policy from a mindless neo-liberal market centered reforms to economic and social support system to small and marginal farmers in the remote region of the country.

In this article **Barah, B.C (2007)**[49] analyzed the following three objectives to identify the regional agricultural economic problems, the future prospect and constraining factors of agricultural growth, and to suggest innovative policy intervention in the North Eastern Region. The study pointed out that the low agricultural productivity of the region depend upon multiple factors such as the vulnerability to floods, soil erosion, heavy siltation and lack of marketing opportunities for the agricultural products. It results in a vicious circle of low input, which leads to low productivity, low income, antecedent agrarian distress and the resultant low growth of outputs.

He pointed out some of the strategies such as an activity or method in which an area has an advantage of producing a particular product over the other should be harness as an opportunity to keep the region in the development of agricultural sector at par with the rest of the country.

Ramakumar, R et al. (2007)[50] objective of the study is to evaluate and analyze the flow of credit to agriculture sector during the 2000s in India. Under the so called "new deal for rural India", the government of India intent to double the flow of credit to agriculture sector. It has laid a comprehensive and an ambitious agriculture credit plan

[49]. Barah, B. C. (2007), "Strategies for Agricultural Development in the North East India: Challenges and the Emerging Opportunities". *Indian Journal of Agricultural Economics*, Vol. 62, No.1, pp. 13-31.
[50]. Ramakumar, R, Chavan Pallavi (2007), "Revival of Agricultural Credit in 20000s: An Explanation". *Economic and Political Weekly*, December 29, 2007. pp.57-63.

to increase by 30% more than the previous years. It has assigned to finance 100 farmers per bank branch and to initiate atleast 2-3 new investment project for agriculture every year. Besides, debt relief measures are restructured.

During 2000-2006, agriculture credit increases to 20.5% per annum of which 1/3 was contributed through indirect finances. Over the course of time, the definition of both direct and indirect credit had considerably broadened. Direct credit was extended to traditional and non- traditional methods of farming and horticulture irrespective of the size of land holdings by the small and marginal farmers. Indirect finances were extended beyond agricultural inputs and tools but from construction to hiring, running of storage facilities for agriculture products for marketing etc. The upper limit for agriculture credit was also increased to Rs 10 crores to Rs 25 crores respectively.

Chaudhary, S.K (2008)[51] pointed out some of the issues pertaining to the supply of credit to agriculture. The lending to the rural agriculture had become highly risky not only from the supplier sides but from the borrowers in loan repayment too. Several reasons are pointed out, such as the administrative cost, inadequate infrastructural facilities, the purpose and the productivity of the loans etc., which makes the matter vulnerable, inspite of its significance. The Cooper Committee recommended re-engineering around the member driven cooperatives, strengthening of capital, structural changes and improved management. The Vyas Committee opted to strengthen the existing system through the PACs, promoting SHGs, selective de-layering co-operative credit policy and to emphasis on the purposeful lending activities.

Rajkumar (2008)[52] brings out the various plans and policies of NABARD and its operational issues of credit for agriculture in the rural areas of India. India, an agrarian economy, in which millions of population depends upon the productivity of the land, suffered a setback at the hands of the money lenders and the landlords. NABARD carries out various services such as credit planning and monitoring, financial services and promotion, development and supervision functions etc.

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[51]. Chaudhary, S.K (2008), *NABARD and its Significance in Agriculture.* Rajat Publications.

[52]. Rajkumar, K. P. (2008), *Agriculture Finance in India: The Role of NABARD.* New Century Publications, New Delhi.

Besides all these refinancing schemes by NABARD, the agricultural insurance in India has become an important issue in recent years. The scope and content of agriculture insurance is very wide and it includes insurance on seeds, cattle, horticulture, plantations, forestry, sericulture, aquaculture, poultry, viniculture and all that are allied to agriculture. The first systematic crop insurance was introduced in 1985 known as the Comprehensive Crop Insurance Scheme (CCIS).

Sindhu, R.S ,Vattta, Kamal and Kaur, Arjinder (2008)[53] The objective of the paper is to assess the flow of institutional credit to agriculture sector in Punjab, and to analyze, if indebtedness is related with inadequate supply of credit or over supply of credit. Credit plays a significant role in the fast adoption of modern technique of production and increases private investment. Therefore, it is imperative to estimate the demand and supply needs of credit for the state and the region depending on the cropping pattern of the region. It is also necessary for the policy maker to frame out policies that adequate institutional credit with accessibility to small and marginal farmers be provided.

The study found that higher use of agricultural inputs brings a favorable impact on input-output prices ratio. The contribution of institutional credit in promoting the use of modern production inputs and private investment are fount significant positive. It was found that in 1995 there was an excess of demand over supply credit by 49%, whereas, in 2005-06 supply exceed demand by 122%

Sahu, Gagan Bihari et al. (2009)[54] examined the farmers' problem to access institutional credit in agriculture sector in Kalahandi district of Orissa. It is highly acknowledged that the rural banking system in India has a wide network of rural financial institutions providing quality services. Nevertheless, several empirical studies reveal that the beneficiaries of these rural credit extension policies and programme are

[53]. Sindhu, R.S ,Vattta, Kamal and Kaur, Arjinder (2008), " Dynamics of institutional Agricultural Credit in Punjab". *Agricultural Economics Research Review* , Vol. 21, pp. 407-414

[54]. Sahu, Gagan Bihari and Rajasekar, D (2009), "Credit Constraints and Distress sales in Rural India: Evidence from Kalahandi District of Orrisa". *Journal of Peasant Studies*, Vol.31, issue 2.

the rural well-to-do and not poorer farmers (Lipton 1976)[55]. Historically, Kalahandi district which is characterized by economical backwardness and rural poverty has poor access to institutional sources of credit and trapped in interlocked credit market. The inadequacy of institutional credit forces the farmers to depend on informal sources of borrowing who are usually the landlords or the money lenders. Dependence on such sources lead to interlocked transaction and distress sale of crop.

Zia, J.R et al. (2009)[56] analyzed the composition of multi agency network of agriculture credit in the post reform period from 1991 to 2005. It was found that total direct short term and long-term credit has increased significantly in the post reform period with percentage share of co-operative to 50.24% in 1991-92, but decreased to 33.4% in 2005-06, the SCBs with a share of 48.51% in 2005-06 from 35.41% in 1991-92. The trend of indirect credit has drastically changed in the post reform period as compared to the pre-reform period; the share of SCBs was 29.51% in 1975-76 and increased to 42.36% in 1980-81. In contrary to it, flow of indirect credit for agriculture decreased to 29.12% in 1985-86. During the post-reform period, its share was 25.12% in 1991-92 and increased to 70.33% in 1999- 00, and again it increases to 76.08% in 2005-06.

Singh, Kuar and Kingra (2009)[57] made an enquiry on the credit needs of the farmers in Punjab and assess the impact of credit in the agriculture sector. The study found that out of 600 households covering 11 districts of Punjab, 62% of the households are accessing credit from the institutional sources, while 38% of them are borrowing from the informal sectors. Inspite of a huge flow of institutional credit, the impact on agriculture sector is very insignificant. It lacks the productive needs of the farmers, besides, it involves high transaction cost and the illiterate farmers find it too complicated to borrow. Further, it has suggested for the involvement of village

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[55]. Lipton, Michael (1976), "Agricultural Finance and Rural Credit in Poor Countries". *World Development,* Vol.4, Issue 7, pp.543-553.

[56]. Zia, Jiyaur Rahman and Zeba, Dr. Zeba Sheereen (2009), "Trends and Composition of Institutional Credit to Agriculture Sector During the Post Reform Period". *http://www.mpra.ub.uni_muenchen.de/24250*

[57]. Singh, Sukhpal, Kuar, M and Kingra, H.S (2009), Agrarian Crisis and Depeasantisation in Punjab: Status of Small/ Marginal Farmers Who Left Agriculture. *Indian Journal of Agriculture Economics.* 2009, Vol.64 (4), pp.585-603.

panchayat to address the needs of the local people and also to help the supplier in reaching out faster.

The objective of the study done by **Das, Abhiman, Manjusha Senapati et al. (2009)**[58] is to find out the role of direct and indirect agriculture credit in the agriculture production and the allocative efficiency across the region of the country. Agriculture production depends upon the increase in agriculture inputs, the responsiveness to technological changes, and the technical efficiency. Agriculture output is a dependent variable depending on the instrumental variables of total outstanding agriculture credit, the total outstanding agriculture accounts and the total agriculture area and rainfall. Direct agriculture credit has a positive impact on agriculture output and has immediate effect. The indirect credit has a positive impact but with a year lag.

The study indicates several gaps in the present institutional delivery like the inadequacy of provision to small and marginal farmers, insufficient and limited deposit mobilization. The impact of agriculture credit plays a critical role in supporting agriculture production. It has suggested for greater involvement of private sector supplier and microcredit through the Self Help Groups (SHGs).

On the 30th anniversary celebration of NABARD in 2012**, Dr Duvvuri (2012)**[59], the former Governor of RBI stressed on the importance of agriculture credit and its policy plans to face the various challenges ahead. He also highlighted on the past achievements, that soon after independence, marked by the entry of the cooperative sectors and the Commercial Banks into agriculture, prioritized on the lending of agriculture. The economic reforms of 1990s witnessed important innovation in agriculture credit, both direct and indirect credit, and comprehensive financial innovations on agriculture plan such as the interest subvention scheme and the PACs for the small and marginal farmers. The RBI is also working out to address the demand-supply, skewed distribution of agriculture credit through agriculture extension programs, financial inclusions supplemented by research and knowledge dissemination to the farmers.

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[58]. Das, Abhiman; Senapati, Manjusha and John, Joice (2009), "Impact of Agricultural Credit on Agricultural Production: An Empirical Analysis in India". *Reserve Bank of India Occasional Paper*, Vol.30, No.2, Monsoon 2009.

[59]. Dr. Duvvuri (2012), "Agricultural Credit; Accomplishments and Challenges". 30th Anniversary of NABARD at Mumbai on July 12-2012.

Rani, Shilpa and Garg, Diksha (2015)[60] main objective of the paper is to analyze the trend in the priority sector lending to agriculture, small scale industries, education and housing for the poor and weaker section of the society by public, private and foreign banks. The authors' concern is to bring out issues impeding the implementation and to prepare strategies to develop the priority sectors. The study found that neither public nor private sector banks could achieve the target set by the RBI. The foreign sector banks could achieve 32% of their total target. The factors associated with this low achievement of target is due to low profitability and high NPAs which discourages the Indian banks to bring down the disbursement of credit to this priority sectors. Besides, the government interference in the working of banks hinders the smooth delivery of credit to the targeted group in the priority sectors. Perhaps, the handling of a large number of small accounts become manpower intensive increasing the transaction cost which hampered the quality of credit and the effectiveness of its delivery to the people.

2.3: Studies Relating to Agriculture Credit: The International Experience

Different countries practice different methods of agriculture cultivation and follows different technique of financing it. Nonetheless, its goal is to achieve the maximum productivity. Under the literature given, the methods and practices of agriculture in few countries of Zaire, Jamaica, Mines Gerais, France, Chile, Sri Lanka, America, Bulgaria, Iran and Pakistan are highlighted with a view to help understand better the methods of agriculture finance across the different countries of the world.

In this article **Rossignoli, Bruno (1976)**[61] studied how the small and medium farmers of Zaire are finance by the banks in the past and on the other hand on how the agriculture banking institutions had proposed to implement its policy plan toward this targeted group of farmers. Zaire is a backward agrarian country base on traditional methods of cultivation, however, trying to 'take-off' with the new-in-born industrial sector, but lacking infrastructure development.

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[60]. Rani, Shilpa and Garg, Diksha (2015), "Priority Sector Lending: Trend, Issues and Strategies". *International Journal of Management and social science Research (IJMSSR*), Vol.4, No.1, January 2015.

[61]. Rossignoli, Bruno (1976**), "**Agricultural Credit in Zaire". *Finafrica Bulletin*, Vol.3, No.1, pp. 14-28

The writer identified some obstacles of agriculture in Zaire and categorize into two which can be remove within a short and long term period. The writer feels that inadequacy over land, lack of agriculture marketing system, high taxation on agriculture products, limited and high cost of credit for agriculture can be remove within a short time period with an efficient authority or organization for agricultural development. Bruno also feels that the territorial dispersion, wrong conception of farming as profession, the low fertility of land in Zaire and the communication obstacle which was inherited from the colonial rule be detached steadily over a period of time.

In Zaire there is no specialized bank for implementing credit to agriculture, hence the commercial banks is the sole authority to implement and control the supply of agriculture credit. The first intervention by the state into the agriculture sector was during the 1970s consisting of granting materials and services directly and indirectly through the department of agriculture. Perhaps, the distribution of this equipment/materials and services was limited to few farmers of 4000 and to single area with no alternatives.

The household saving should be considered as an important effective tool of agriculture credit system which can sustain the process of investment finance. Moreover the commercialized behavior in the traditional farming and economics advantages with innovative methods was created among the farming community. In order words, a comprehensive strategy along with consistent state intervention in areas of agriculture and related activities goes together for further progress.

In 1980[62] an enquiry was made into the credit needs of the rural farmers in Sri Lanka, and suggests appropriate direction to the flow of credit to the needy famers. The needs of the rural famers are diverse and complex, they need credit for their consumptions, illness, and festivities to repay their debt, invest in their business and to increase their agricultural productivity. In modern time, credit for agriculture has gain immeasurable importance due to new scientific methods of farming. Farmers of Sri

[62]. "Rural Credit Need, Availability Issues, Directions". Financing Agriculture (1980). Vol. XII, No.1, Jan- March, pp.21-37.

Lanka borrow from both institutional and non-institutions such as friends, relatives etc, however, they are not free from the debt burden.

Now, the problem of debt burden gave a paused to the question of credit as a good or bad tool for enhancing agricultural productivity. The argument runs that, credit should be given only for productive purposes. However, the determination of viability or the productivity of an investment possesses considerable difficulties as well. Whatever, the unforeseen circumstance it possesses, a farmer has to come out of his traditional methods of farming with only his labor and land. This is because the untried methods or the risk aversion to new changes will only continue to trap him in the vicious circle of poverty. Hence, it is concluded that credit be the feature of agricultural development policy for the rural development.

In this article the authors **Stephen K, Pollard et al. (1983)**[63] examined the impact of credit on agricultural production in the southern St. Elizabeth and Northern St. Catherine in Jamaica. In 1977, the people National Party Government introduced the Crop Lein Credit Programme for the small farmers of Jamaica in which 1/3 of the farmers received loans, however, only 5% of the production was affected. Therefore, the objective of the study was to identify if an increase in the capital supply in term of agriculture credit would enhance the agriculture production. Capital here is defined as the expenditure on current operating expense such as fertilizers, machineries and seeds etc. The study is based on the belief that an increased in the capital would lead to a proportionate increased in the agriculture production.

It was found that only 10-11% of the farmer had access to formal credit due to shortages of fund and lack of demand by the farmers. Many farmers are borrowing not only from formal sources but the informal sources too, as it was found to be more accessible. This indicates that formal market alone cannot meet the credit demand of the farmers in Jamaica. Majority of the farmers also uses off farm earning to enhance the current spending position. Thus, credit as instrument of optimal policy for society is neither sufficient nor necessary condition to increase agriculture production, rather it act

[63]. Stephen K, Pollard and Peter, J. Hefferman (1983), "Agricultural Productivity and the Credit use of Small Farmers in Jamaica". *Social and Economic Studies*. Vol. 32, No.1, Rural Financial Markets in Jamaica (March 1983), pp.42-62.

as a tool to patronage the political system as only a few farmers are benefited which has led to equity gap in the agriculture sector in Jamaica.

Taylor G Timothy et al. (1986)[64] analyzed the effects of Integrated Rural Development of Zona da Mata region of the state of Mines Gerais (PRODEMATA) on the technical and allocative efficiencies of traditional farmers. The region is predominantly agriculture, inhabited by small traditional farms and poorly educated populace. The objective of the paper is to examine, if subsidized agriculture credit combined with technical services including research demonstration can increase the agricultural productivity of the small and targeted tradition farmers. This was built on the rational belief, that the inabilities of the farmers to purchase the necessary technologies of modern methods of production are the barrier preventing the transformation of traditional agriculture.

The result drawn from a sample size of 433 farms during the period of 1981-82, indicates an allocative efficiencies of all participant farms and 76.5% of non participant farms which is consistent with Schultz hypothesis, "the poor but efficient". The study found that the mere influx of credit to agriculture alone cannot increase the agricultural productivity, better managerial skill on utilization of resources, general awareness and information about the technical application of cultivations are equally important.

Bouchet, Frederic, Orden, David et al. (1989)[65] evaluates the French agricultural changes that occurred during the 1960-1984. The French agriculture accounts for 30% of farms productions within the European community and the main exporter of agriculture products. There was a slow-down in the growth of world agriculture products in 1980s which was a major concern for the US and European community, French innovate a comprehensive agricultural policy. Since then, it has emphasized on rapid substitution of capital for labor, supported by high priority given to public research for agriculture. The objective is to increase the farm size, early payment

64. Timothy G, Taylor, Drummond, H.Evan and Gomes, Aloisio T (1986), "Agricultural Credit Programs and Production Efficiency: An Analysis of Traditional Farming in Southeastern Minas". *American Journal of Agricultural Economics*.Vol.68, No.1 (Feb.1986), pp.110-119.

65. Bouchet, Frederic, Orden, David and Norton, George W (1989), "Sources of Growth in French Agriculture". *American Journal of Agricultural Economics,* Vol. 71, No.2 (May 1989), pp. 280-293.

or supplementary pension to elderly farmers who after retirement are designed to facilitate and modernize the French agriculture through the consolidation and enlargement of productions.

Chile' agrarian had faced the twin difficulties of remaining as wage laborers and at the same time to face the market competitiveness. **Kay, Cristobal (1997)**[66] objective of the study here is to identify avenues and strategies to modernize the peasant agriculture to regain and develop its market competitiveness, so that the living conditions of the agrarian improve. The author feels that the market forces are an opportunity to be harness for the growth and development, if effective policies are design to promote peasants' participation. For this, Chilean government introduces the policy of reconversion to increase efficiency of agriculture productivity through variety of mildly protectionist measures.

It was found that farmers with the ability to adjust to the changing system got benefitted and the ability to swiftly adjust to the changing price signals and production pattern depends on the skill of entrepreneurship, the farm size, access to capital, technical knowledge, agro-climatic factors etc. The policy was targeted to those sections of society with more challenges and difficulties to face the foreign competition.

In this article **Sherrick, Bruce J, Barry, Peter J et al. (2000)**[67] saw and experienced the major transition of agriculture mortgage market in America, and he developed a credit risk model and empirically implement to estimate the actuarial cost involve against credit risk in pools of agricultural mortgage loans. During 1979-1992, there was greater institutional lending and increased standardization of financing arrangement, more reliance on non deposit funding and expanded potential for securitized loan pools, which affects the agricultural mortgages market activities. The result was that credit risks are initially more sensitive to pool size than to the later stage.

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66. Kay, Cristobal (1997), "Globalization, Peasant Agriculture and Reconversion". *Bulletin of Latin American Research*, Vol.16, No.1, Special Issues: Agrarian Changes and the Democratic Transition in Chile (1997), pp. 11-24.
67. Sherrick, Bruce J, Barry, Peter J and Ellinger, Paul N (2000), "Valuation of Credit Risk in Agricultural Mortgages". *American Journal of Agricultural Economics.* Vol. 82, No. 1 (Feb 2000), pp.71-81.

It has suggested for a direct and indirect policy implications, such that direct policy implication provides an improved approach for budget scoring contingent liabilities to the government. The indirect policy implication gives information about the impact on the risk involves in credit to changes in underwriting and provides policy guidance, when looking for a new or alternative loan facilities.

The author **Rizov, Maria (2004)**[68] in this article, observed the profitability and economic growth through credit supply in the transition economy of Bulgaria. During the period of transition in the economy, a firm faces a period of soft budget and credit rationing. A firm will be credit constraint, when it demand loan more than market are willing to supply. Two sets of policies are recommended for such a situation, policies aiming to harden the budget constraint for loss-makers and policies to ease the credit constraint for profitable companies.

The study concluded that there is disparity between perceived qualities of a firm's fixed assets and their real productivity. The econometric test on profitability confirms of liquidity hypothesis indicating better access to external financing result in higher profits. It also found that corporate restructuring indicate higher firms profitability. It has suggested for improving and enforcing the existing laws and provides protections for creditors' right. Promoting transparency and flow of information through a central credit registry, and creating credit opportunities to the small and medium enterprises will build a better condition to increase profitability and economic growth through credit in a transition economy.

Yazdani Saeed (2005)[69] presents an evaluation of agricultural loans granted by the Islamic credit system in Iran**.** The analysis is base on the survey of 200 farmers in the two states of Iran during 2002-03. The objective of the study is to provide an explanation of different loans under Islamic law and to explore the risk of Islamic credit system. There are two ways of granting loan i.e. interest free loans and the profit and loss sharing loans. The former is to finance small scale enterprises with no interest for

[68]. Rizov, Marian (2004), "Credit Constraints and Profitability: Evidence from Transition Economy". *Emerging Markets Finance and Trade*, Vol. 40, No.4 (July-Aug 2004), pp. 63-83.

[69]. Yazdani, Saeed (2005), "An Evaluation of Agricultural Credit System in Iran". *Saving Development,* Vol.29, No.2 (2005), pp. 117-132

BPL families. The financial institutions are also permitted by law to gives credit based on the profit and loss of a project. Wherein, interests are placed by the proportion of profit gain. Approximately, 77% of the small borrowers prefer profit and loss sharing, due to religious reason and relatively because of risk sharing. The Islamic principles prohibit the pre-determined interest as an offence against moral and other religious group. This is because all rate of return on capital are risky.

Boucher, Steve and Guirkinger, Catherine (2007)[70] re-evaluates the role of informal sector loans in the rural areas of the developing countries. The model of the analysis is base on the assumption that all the farmers are endowed with one unit of land and labor, but endowed with different financial wealth. There are three actors the farmers, the formal lenders and the informal lenders. The farmer requires fixed investment $K>\hat{W}$ and technology explores the dual role of credit and the provider of liquidity and potential insurance.

The premises of the analysis is that informal lenders, better access to information provides lower transaction cost and hence the preferred sector. Its ability to reciprocate information with intensive screening and monitoring for collateral resolve issues related to moral hazard. The informal sectors' has the advantage to better serve those farmers who cannot and those who do not want to post collaterals which are not possible in the formal sector set up.

Ahmed, Nawaz (2011)[71] objective of the study here is to find out the impact of credit to agricultural production. The author identify agriculture credit as the indirect input to adopt modern methods of farming and felt that it should be make available to the rural household. But despite of this fact there exist a positive correlation between wealth and the access to institutional credit in rural areas of Pakistan. Agriculture credit shows a right positive relation with agricultural output, but has an indirect impact on output. An increased in 1% credit increases the agriculture output by 0.12% and an average increase in 1% of labor yields an output by 1.2% respectively. The study

[70]. Boucher, Steve and Guirkinger, Catherine (2007), "Risk, Wealth, and Sectoral Choice in Rural Credit Market". *American Journal of Agricultural Economic*, Vol.89, No. 4(Nov. 2007), pp. 991-1004.

[71]. Ahmad, Nawaz (2011), "Impact of Institutional Credit on Agricultural Output: A Case Study of Pakistan". *Theoretical and Allied Economics.* Vol. XVIII (20011), No.10 (563), pp. 5-16.

suggested that the loan issuing authority should focus on the small farmers with proper strategy tools to increase productivity.

Reyes, Alvaro Lesink, Robert et al. (2012)[72]: In this paper the authors analyze the factor determinant of farms' productivity focusing on the effect of short term credit to farmers producing market oriented crops in Chile. The study covers 177 fruits and vegetable growers during the period from 2006-2008. The study found that there is little difference in the impact of short term credit on the farm productivity. The constraint in the formal sector is substituted by the informal sector. Moreover, it was found that more educated managers have better skills and tools to improve their productivity. Therefore, access to institutional credit does not seem to change farmer's production decision for market oriented crop. Rather, it is education and the factors associated with and the types of activity have greater influence on the farms productivity.

In a study conducted by **Ayeba, Ojonugwa, Ikani, Daniel, Idoko, B (2013)**[73] in the rural areas of Nigeria made an assessment on the impact of agriculture credit among 300 farming households. Nigeria is an agrarian country and agriculture plays a significant role in development of the economy. Nonetheless, it is felt that the government of Nigerian gave undue importance for the development of agriculture sector. Nigeria is endowed with a lot of natural and human resources, yet the citizen live in poverty for several reasons. It is felt that adequate financial assistance should be provided to the farmers to improve the land productivity and better utilization of the available natural resources.

However, the study found that the general awareness about the available institutional finance was low. About 53.33% of the credit needs of the farmers are contributed by the informal sectors. Factors such as bureaucratic bottlenecks, lengthy procedure, lack of collateral securities and guarantors hinders the accessibility of institutional credit. Out of 300 respondents only 33.33% are aware of various

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[72]. Reyes, Alvaro, Lesink Robert, Kuyvenhoven Arie and Moll, Henk (2012), "Impact of Access to Credit on Farms Productivity of Fruits and Vegetable Growers in Chile". *Paper presented at the international Association of agricultural Economists(IAAE) Triennial Conference, Brazil 18-24 August 2012.*

[73]. Ayeba, Ojonugwa, Ikani, Daniel, Idoko, B (2013), "An Impact Assessment of Agricultural Credit on the Rural Farmers in Nigeria. *Research Journal of Finance and Accounting.*Vol.4 No.18, 2013.

institutional schemes for agriculture and allied activities, whereas, 66.67% of the respondents were ignorant of the available institutional credit. Besides, the delay in institutional credit accessibility pose a serious threat to the productivity of the land as agricultural crops are seasonal and any delay in the cultivation causes lose to the farmers. It was felt that banking authorities should create more awareness on the available schemes and open up bank branches in rural areas to avoid unnecessary delay. Stringent credit conditionalities should be remove that discourages farmers from borrowing.

2.4: Recapitulation

In summation of the above literature review, it can be said that agricultural credit has its advantages as well as disadvantages, differing from region to regions and from person to persons depending upon the utility of credit borrowers. Several studies suggested credit as an effective tool to improve the overall agricultural production. Hence, the importance and the urgency to the needs of credit in the agriculture sector, especially in the rural areas of India are mentioned. Institutional agriculture finance as is discussed, in many parts of the country had pushed the rural farmers to a considerable change. However, the marginal and small farmers who needed credit most are often left out and it is the large and the influential sections of the society who got benefitted. Beside, miss-utilization of loan for unproductive purposes has been the reason for accumulating over-dues.

Other restraint, that needs to be rectify as was suggested by some authors are the problem of uneven distribution of credit across regions, and to the few favored category/ groups of farmers etc. Perhaps the high cost of interest rates, the lengthy administrative procedure of obtaining the loans and the extension of bank branches to the rural areas are to be deal with urgency. Steps to reduce debt burden and distributive policy measures of the government could help the farmer to utilize the agriculture loan for productive purpose rather than divert the loan for other personal consumption purposes. We shall discuss the implication of credit to agriculture sector in the context of Nagaland in the next chapters.

CHAPTER III
PROFILE OF THE STUDY

3.1: Introduction

This chapter presents the basic information on the geography, the methods of agriculture practices, socio-economic condition and agricultural background of the State. It has special focus on the selected villages for the study in the two Districts of Kohima and Phek. This is because it is important to know the crucial characteristic and the factor associated with agriculture. The Districts of Kohima and Phek are selected on the ground that both have similar agriculture practices which is mainly of terrace cultivation due to the geographical terrain and climatic condition. Besides, the District is stratified into block level in which the District headquarters are identified for the purpose of the study, so as to know the main sources of finance for the agriculture sector. At the lowest level, two villages under each block levels are selected in which the farming households are interviewed for the better understanding of agriculture practices and its finances. In the following paragraphs, we will look into the detail profile of each area accordingly.

3.2: State Profile

Nagaland, the 16th State of Indian Union is situated in the north eastern part of India. It is bounded by Assam in the north-west, Myanmar in the east, Arunachal Pradesh in the north east and Manipur in the south. Nagaland is one of the 'seven sisters.' of the North-East. It lies between 2506 ˚and 2704˚ latitude North of Equator and between 93020˚ and 95015˚ east of longitudinal lines, covering an area of 16579 sq. km, and has a population of 19, 80,602 according to 2011 census with the population density of 119 persons per sq.km. The State is divided into 11Districts namely – Dimapur, Kiphire, Kohima, Longleng, Mokokchung, Mon, Phek, Peren, Tuensang, Wokha and Zunheboto. It has a total number of 75 Rural Development Blocks and 1428 villages (2011 census).

3.3: Geography, Physical Features, Climate & Vegetation

It is a hilly mountainous region situated at an altitude of 2,134 to 1,524 metres above sea level. Mt. Saramati is the highest mountain, measuring 3840 metres above the sea level. Other important mountains are Japfu and Pauna. Mt. Japfu is 3014 metres and it is in Kohima District, Mt. Pauna is in Peren District and has a height of 2841 meters respectively. The plain areas are limited to Dimapur, Jalukie and adjoining area of Assam. Nagaland received a good amount of rainfall annually. The average annual rainfall in the State ranges from 2000 to 2800 mms, concentrated mainly in the monsoon months between April and October. But the difficult terrain and the absence of water storage facilities is of great challenge. However, inspite of that, the soil is generally fertile and are receptive to the application of fertilizers. It has been estimated that there are over 81,000 species of fauna and 47,000 floras and nearly 15,000 flowering species.

Table 3.1: Geographical Characteristics of Nagaland and the Districts of Kohima and Phek

Geographical Features	Nagaland	Kohima	Phek
Area	16579 sq.km	3114 sq. km	2026 sq.km
Northern Latitude	25°6' and 27°4 North	25˚40'North	25˚28' North Latitude
Eastern Longitude	93°20 and 95°15 East	94˚08 East	94˚11 & 95˚ East Longitude
Altitude	194m and 3048 m above sea level	1444.12m above sea level	1524 m above sea level
Climate	Pleasant, moderate	Pleasant, moderate	Pleasant, moderate
Normal Rainfall	2000-2800mms	2000mms	1,527mm
Major irrigation Source	Canals, streams	Canals, streams	Canals, streams
Major Rivers.	Dhansiri, Doyang, Dikhu Tizii,	Dzii-ii	Tizu, Sidzii, Lanye

Source : Hand Book of Statistics2013, Directorate of Economics and Statistics, Nagaland; Kohima
: Statistical Abstract 2013, Directorate of Economics and Statistics, Nagaland; Kohima

Out of the total land area of 16, 57,900 hectares (ha.), forests occupy an area of approximately 8, 62,930 ha. This amounts to 52% of the total State's geographical area. The forests in Nagaland may be classified under three types' viz. (1) Tropical Wet Evergreen Forests (2) Tropical Semi Evergreen Forests and (3) Mountain Sub-Tropical Pine Forests. Of the three, the most important in terms of commercial exploitation is the Tropical Wet Evergreen Forest, which is rich in valuable evergreen timber species in the top canopy with bamboos occurring abundantly in the lower and middle storey. Forest provides variety of livelihood to the Naga people.

3.4: Demographic Profile

Let us look at some of the basic socio-demographic profile of the State and the Districts of Kohima and Phek in particular.

Table 3.2: Socio-Demographic Profile of the State and the Districts (2011 census)

Sl.no	Items	Nagaland	Kohima	Phek
1	Total	16579 sq.km	3114 sq.km	2026 sq.km
2	Total no. of household	396002	54391	36639
3	Population	1980602 (100)	365017 (100)	163294 (100)
a.	Male	1025707 (51.78)	140118 (38.38)	83684 (51.24)
b.	Female	954895 (48.21)	129945 (35.59)	79610 (48.75)
4	Density of population	119	117	81
5	Literacy	1586660 (80.11)	312381 (85.58)	1292145 (79.13)
i.	Male	854311 (83.29)	125097 (89.28)	70738 (84.53)
ii.	Female	732308 (76.69)	105983 (81.56)	58513 (73.50)
6	Live Birth rate (per'000)	24.95	34.42	20.95
7.	Death rate (per'000)	3.8	4.51	4.59
8	cultivators	420379	38017	44069
9	Agri. Laborer	22571	911	1311
10	Other main workers	288704	59349	17656

Source : Statistical Handbook of Nagaland 2011; Directorate of Economics & Statistics, Census 2011,

Out of the total population, Kohima has 18% of the State's population which is about 365017 and 8% of the State population in Phek District with 163294 people. The density of population of the State is 119 persons per sq.km and 117 persons per sq.km and 81 persons per sq.km in Kohima and Phek respectively. The literacy rate of Kohima District is 85.58% which is higher than the State literacy of 80.11%, while that of its counterpart is 79.13% only as per 2011 census.

3.5: Agriculture

In Nagaland, traditionally, agriculture means, slash and burn cultivation popularly known as Jhum /shifting cultivation. Large areas of forest are cut down and burn every year for cultivation and left barren/fallow for several years until it retains its fertility. This practice is widespread in Nagaland due to difficult terrain base on low-external agricultural input technology[74]. In jhum cultivation, an individual farmer decides the areas as to where he/she want best to cultivate a particular crop or vegetables, however there are also cases where the village councils coordinate (joint property holding) as to where cultivations are to be taken up each year. These councils decide which forest plots will be cleared for cultivation during each growing season, and which plots will be allowed to rejuvenate through re-growth. Out of the total land area of 16, 57,900 ha, 3, 89,120 ha of land are under agriculture. Jhum occupies about 90% of the land area under agriculture.

The art of permanent methods of Terrace Rice Cultivation (TRC) started in much later year though there is no written record on the exact date and year of its practice. Oral tradition tells of how farmer construct terrace fields with their available tools and implements. Sources also tell that some spirit exist to help the farmer in the constructions of the terrace fields. In the evening, when the farmer is to go home after the days' work, he would placed a stone or a stake for the next days' work, the next morning he would return to see the whole area perfectly constructed as was done himself. Infact, it is surprising how the farmer without any sophisticated tools and implements constructed large and long terrace benches like on the hill slope, some located at an elevation between 200 and 2,000 meters. The subtropical or temperate rain

[74]. Nagaland Environmental Protection and Economic Development (1999): "Building upon traditional agriculture in Nagaland, India. Published by NEPED & IIRR.

forest proves to boost terrace rice cultivation. These terrace fields are irrigated either through:

i) Contour channels from the nearby streams for distributing water from hill tops to lower fields,
ii) Contour channels from small tanks(Zabou) built by constructing small dams over the stream,
iii) And lift irrigations with manual or mechanical power devices.

Terrace cultivation is confined largely to the Districts of Kohima, Peren and Phek. Rice is the staple food, hence paddy is cultivated both in terrace and jhum fields. Single cropping pattern is a common practice in the State resulting in low cropping intensity. Multiple cropping is yet to be practiced by the farmers except in negligible areas. Rabi crops are mainly confined to vegetables. Use of technological interventions in terms of improved seeds, fertilizers and better implements is limited. The poor mechanization of agriculture is due to the nature of difficult terrain in the State and the low purchasing power of the farmers. The use of fertilizers and pesticides is uneven and almost negligible till today.

3.6: Landholding Pattern

The pattern of land distribution is known for its uniqueness and peculiarity. Individual ownership and fragmentation of land holding is common, though there are a few plot of land particularly jhum field and reserved forest owned by clans or Khel[75]. Since time immemorial every Naga farmer inherits plots of land for cultivation from their grandparents, likewise, every household owned several parcel of land consisting of the terrace fields, jhum fields, reserved forest for firewood and fallow uncultivable land. For the Naga especially in the rural villages, reserve forest for firewood is as important as food security as there is no other source of energy. The study conducted by NEPED in 1997 concluded that in Phek District the average number of trees per hectare is 627. In Phek District, each household has an average of 5-8 parcel of reserve forest in different location, which is comparatively higher than that of its counterpart in Kohima District. Every household has a kitchen garden attached to the house or just a few

[75]. The village settlement is divided into block wise (sometimes- east, west, middle, north and south) for easy administration purposes and are known as Khel. It also means colony or ward.

minutes away and grows varieties of vegetables and fruits mostly for self consumption. Besides, they also domesticated animals such as dog, duck, chicks; pigs attached to their house or around the garden. Cattles are also kept within the house corridor in olden days. This fragmentation of land holding is reflected in the table below.

Table 3.3: Estimated no. of parcels per operational holding and average area per parcel by size groups in Nagaland

Size groups(ha)	Total holding		No. of parcels		Total no. of parcel	Average no of parcel per holding	Average area per parcel	Average area per holding
	Number	Area	Within the village of resident	Outside of village of residents but within the same tehsil				
Below 1.02	12315 (7.29)	6333 (0.55)	17215 (4.58)	--	17215 (4.57)	1.40	0.37	0.51
1.0-1.99	13376 (7.92)	15575 (1.37)	21976 (5.85)	--	21976 (5.84)	1.64	0.71	1.16
2.0-3.99	36689 (21.74)	94706 (8.36)	76443 (20.37)	146 (12.80)	76589 (20.35)	2.09	1.24	2.58
4.0-9.99	75993 (45.03)	471471 ((41.65)	174738 (46.57)	955 (83.77)	175693 (46.69)	2.31	2.68	6.20
10 and above	30368 (17.9)	543767 (48.04)	84768 (22.59)	39 (3.42)	84807 (22.53)	2.79	6.41	17.91
All group	168741 (100)	1131852 (100)	375140 (100)	1140 (100)	376280 (100)	2.23	3.01	6.71

Source : Input Survey 2006-07, Directorate of Agriculture, Nagaland: Kohima
Note : Figures in the parenthesis are percentages

The table shows that each family holds at least 3-4 parcels of terrace field cultivating up-to 2 khi[76] of paddy a year, tree plantation or reserved forest for fire wood and jhum

[76]. Khi is a locally weaved bamboo basket for storing paddy. Its size differs, but the most common size has the capacity to store 8 bags of paddy which is equal to 16 tins. 1 tin of paddy if grind and husk removed yields 7 kg of grains. The local craftsmen select the best quality of bamboos and cut down at an appropriate season to weave this giant size basket for storing their paddy. It takes at least 20 to 30 days to weave the basket. The finished giant size baskets are then lifted on an elevated space supported by wooden post and smoked on steady fire to give strength to the fresh strand of bamboo.

fields in different locations. The input survey 2006- 07 estimated the average size of land holding in the State as 6.71 hectares with 3, 76,280 numbers of parcels. It is found that the average size of each parcel comes to 3.01 ha with 2.23 number of parcel per holdings. This fragmentation of land holding is technically term as parcel, means the entire area of land is surrounded by land of other holding. It consisted of more than one cadastral units, or plots or fields.

Land is considered as the most important asset of a Naga family. It is the most important wealth one's parent can offer to their children. The land(s) inherited from parent(s) are passes on to generation, which are legally well defined orally. The boundaries of the land are well set, time immemorial by grandparents, and cannot be change or move at one's own discretion[77]. Every land is either owed by an individual family, clan or commonly owed by the village. Thus, in Naga society, it is seen that no individual is deprived of land. Being a patrilineal society, land properties are generally owned by men, but women also inherit movable properties. The customary law protects every individual landowner and in case of any land disputes; it is settled by the customary law which is abiding on the ancestral tradition. Infact, the customary law is the final law. Hence, a proper documented record on land ownership is limited or not at all maintain in rural areas.

3.7: Land Use Pattern

In 2001, out of the total land area of 16,579 sq.km in the State, the total land area under agriculture production was 3, 89,120 ha with 1, 16,046 families practicing shifting cultivation. There is also an increased in the operated land area from 1046176 ha in 2000-2001 to 1172808 ha during 2005-06. The total reporting area for land utilization has increased from 1617647 ha in 2007-08 to 1625004 ha in 2010-11. The total cropped area has also raise from 399878 ha in 2007-08 to 481316 ha in 2009-10. However, the land area sown more than once consisted of only 84000 ha in 2007-08, and even in 2010-11, it was 96190 ha only. The detail land use patterns of the State (2012-2013) are furnished in table 3.4 given below.

[77]. Lohe, Kewepfuzu (2011), "Naga village, a sociological study". *EBH Publishers.(India) Guwahati-1*

Table 3.4: Area under different land uses in Nagaland 2012-13 (in hectare)

Sl.no	Land classification	Nagaland
1)	Total land Area	16,57900
2)	Reporting area for land utilization statistics(I to v)	1651793
i	Forest	862930
ii	Non available for cultivation(a+b)	95179
	a) Land put to non agriculture uses	92683
	b) Barren and uncultivable land	2496
iii	Other uncultivated land excluding fallow land(a+b)	155439
	a) Land under miscellaneous tree crops & groves not included in net area sown	103062
	b) Cultivable waste land	52377
iv	Fallow land(a+b)	155126
	a) Fallow land other than current fallow	100301
	b) Current fallow	54825
v	Net Area sown(3-4)	362231
3	Total cropped area	452471
4	Area sown more than once	96190

Source : Directorate of Agriculture, Nagaland.
: Economic indicator of Nagaland 2013, Directorate of Economics & Statistics, Nagaland: Kohima

The total cropped area is 452471 ha, and the total main cultivators in the State are 420379. In 2011 census, the total cultivable area of the State stands at 721942 ha with 407190 ha under gross cropped. The area sown more than once in 2012-13 is 92100 ha only and this has led to less cropping intensity. The total fallow land consisted of 155126 ha which are taken up for cultivation, but are temporarily out of cultivation for at least five years. Multiple reasons are cited such as the irrigation problems due to difficult terrain and poverty. Though, the Net Irrigated Area has increased from 70080 ha during 2007-08 to 77320 ha in 2008-09, it has fallen to 72670 ha in 2009-10.

3.8: Cropping Pattern

The cropping pattern exhibits the co-evolution of traditions, social and the environmental system of a place. The Naga farmers practices very complex style of agricultural cultivation as such the site factors relating to the altitude, temperature, and soil type for the cultivation of each variety of vegetables and crops are given due consideration. These factors play a crucial role in the management of traditional cultural practices and in conserving natural fertility of the land, as the application of fertilizer and pesticides are not known until in recent time (though its application is still very negligible). The most commonly used fertilizers are Nitrogen (N), Phosphate (P), and Potassium (K). The fertilizer and pesticide consumption in the recent past are indicated below:

Table.3.5: Consumption of Fertilizer and Pesticide

Year	Fertilizer			Total (in M.T)	Pesticide	
	N	P	K		Solid(in M.T)	Liquid (in liters.)
1995-96	281.53	182.45	49.20	513.18	32.31	320
1999-00	480.14	280.00	59.60	819.74	9.00	400
2005-2006	334.00	231.30	70.00	635.30	5.00	120
2009-2010	476.37	306.49	165.00	947.86	NR	NR

Source : Directorate of agriculture, Nagaland: Kohima
Note : NR: Not Reported

The State consumption of fertilizers is increasing over the recent years; in 1995-96 the total fertilizer consumption was 513.18 MT to 947.86 MT in 2009-10, while the application of pesticide is inversed during the same duration. Some of the principal crop in relation to the area and productivity is detailed as under in table 3.6.

Jhum Paddy: The maximum land area is under jhum cultivation i.e. 96570 ha, yielding 173830 MT in the State in 2010-11. In Phek District around 11920 ha are under TRC/WRC and 8050 ha in Kohima District producing 29610 MT and 19620 MT respectively.

Table 3.6: Area & Production of Principal Crops in the State and the Districts

Major crops	Area & production	Nagaland			Kohima			Phek		
		2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11
Jhum Paddy	A	95780	90900	96570	8500	8360	9880	2100	1900	1960
	P	171080	110300	173830	14550	10190	17820	3750	2250	3400
TRC/WRC Paddy	A	70300	77670	84820	780	7380	8050	11900	11000	11920
	P	174010	130010	207530	17380	12820	19620	27580	19030	29610
Maize	A	64400	68100	68430	4500	4490	4600	8000	8650	8730
	P	115920	73190	134000	7180	4510	9020	14240	9410	17040
Small Millets	A	11920	9650	8500	2180	1940	1750	2400	2150	2050
	P	11340	3460	8030	2060	700	1700	2300	780	2020
Naga Dal (rice bean)	A	3980	3640	4500	710	680	760	650	620	710
	P	3060	5140	4500	610	520	780	480	500	720
Beans	A	2140	NR	2150	300	NR	310	260	NR	270
	P	2990	NR	2680	430	NR	380	360	NR	340
Soya bean	A	24470	24240	24350	2000	1970	1990	2060	2050	2070
	P	36680	25010	30430	2700	2030	2530	2880	2120	2640
Sugar cane	A	4320	5090	4250	200	280	210	280	350	250
	P	18576	152880	184920	8620	8400	9150	11990	10510	10890
Potato	A	5610	5700	6250	1210	1350	1440	880	1060	1150
	P	69140	59580	78400	14870	14450	18040	10840	11270	14390
Tapiaca	A	1600	NR	1650	150	NR	140	80	NR	120
	P	36880	NR	NR	3450	NR	3300	1860	NR	2820

Source : Statistical Handbook of Nagaland, 2011
Note : A; Area in hectare, P= Production in M.T)
NR : Not Reported

TRC/WRC Paddy: Land area under TRC/WRC has increased from 70300 Ha, yielding 174010 MT in 2008-09 to 84820 Ha and yielding 207530 MT in 2010-11 in the State. In Kohima District, only 780 Ha of land areas are under TRC/WRC, yielding 17380 MT in 2008-09, and it increases to 8050 Ha, yielding 19620 MT in 2010-11. In Phek District the total land area under TRC/WRC was 11900 Ha yielding 27580 MT in 2008-09, there is a margin increased in land area only to 11920 Ha and produces 29610 MT in 2010-11.

Maize: The total land area under maize cultivation in the State was 64400 Ha in 2008-09 and yields 115920 MT in the same year. It has now increased to 68430Ha with 134000 MT in 2010-11. In Kohima District it was 4500 Ha and produces 7180 MT in 2008-09 and increased to 4600 Ha with 9020 MT in 2010-11. In Phek District, the total land area under maize production was 8000 Ha and yields 14240 MT in 2008-09, and increased to 8730 Ha and 17040 MT of areas and productivity in 2010-11 respectively.

Small Millets: The total land area under small millets cultivation in the State was 11920 Ha and yield 11340 MT in 2008-09. The land area for small millet cultivation decreased to 8500 Ha and its production was only 8030 MT in 2010-11. In Kohima District, it was only 2180 Ha and 2060 MT in 2008-09; it has further decreased to 1750 Ha with only 1700 MT of production in 2010-11. Whereas, in Phek District, it was 2400 Ha and 2300 MT in 2008-09, but it decreased to 2050 Ha and 2020 MT in 2010-11.

Naga Dal: Total land area for Naga dal cultivation was 3980 Ha and its production was 3060 MT in 2008-09. It increased to 4500 Ha of land area and 4500 MT production in 2010-11 in the State. However, in Kohima District, the area and production were 760 Ha and 780 MT in 2010-11, whereas, in Phek District, it was 710 Ha and 720 MT in production respectively in 2010-11.

Beans: The total area under beans cultivation was 2140 Ha and its production was 2990 MT in 2008-09. It has slightly increased in the area of production to 2150 Ha, but the total output decreased to 2680 MT in 2010-11. Similarly, in Kohima District, bean cultivation covered an area of 310 Ha and producing only 380 MT in 2010-11.

Whereas, in Phek District, about 270 Ha of area was under bean cultivation and its production was 340 MT in 2010-11.

Soya beans: In Nagaland the land under soya bean cultivation was 24350 Ha and its production was 30430 MT in 2010-11. In Kohima District it was 1990 Ha and 2530 MT, whereas in Phek District, it was 2070 Ha and 2640 MT of production during the same year.

Sugar Cane: The total area for sugar cane production is 4250 Ha and produced 184920MT in 2010-11 in the State. However, in Kohima, it covered only 210 Ha producing 9150 MT. Whereas in Phek District, it was 250 Ha and yield 10890 MT during the year 2010-11.

Potato: In 2010-11, the total area under potato cultivation was 6250 Ha and 7840 0MT, which consist of 1440 Ha and 18040 MT in Kohima and 1150 Ha and 14390 MT in Phek District respectively.

Tapiaca: The total land under Tapiaca cultivation was only 1650 Ha and its production was 38790 MT in 2010-11 in the State. In Kohima District, Tapiaca production consisted of 140 Ha and yielded 3300 MT, whereas in Phek District, the area for tapiaca was 120 Ha and its production was 2820 MT in 2010-11.

3.9: Occupation and Livelihood

Nearly 82.26% of the total population lives in the rural villages in Nagaland (2011 census). The economy of the State is predominantly agrarian. As per the Census 2001, 68.03% of workforce was engaged in agricultural activities, while only 2.12% engaged in household industry and 29.18% constituted other workers. Agriculture continues to be the livelihood of the Naga people; the numerous festival of the State revolves around the practice of agriculture. Dependency for employment on agriculture has declined from as high as 96.5% in 1950s to about 68% in 2000; however, it continues to be the main source of livelihood.

The traditional method of farming remain as the core practice of the people for many years based on subsistence, however, negligible changes and improvements are observes in parts and pockets of the State. Every Naga farmer cultivates just what is enough for his family in a year, therefore left no surplus for market. However, with the increasing demand of agriculture products in the market, brought about due to increasing trend of tertiary employment, agriculture productions are also improving at a considerable level. The introduction of micro financing the agriculture activities has given a new makeover in the overall practice of agriculture in Nagaland.

3.10: Socio-Cultural Life of the People

Nagaland is popularly known for many festivals, which has its roots from the tradition relating to agricultural activities of every Tribes and Districts. In the case of the Angamis of Kohima District, Sekrenyi and Terhunyi are celebrated to begin the sowing activity and to rest and move on to the next agricultural activity respectively. The male members of the family prepared the agriculture tools, the bamboo baskets, barns to store paddy etc, while the female weaves cloths for the whole family, and not knowing these basics is considered a shame and despised in the society. Since, agriculture is the only occupation of livelihood (prioritizing education took shape only in the 19th century) every child in the family as young as 7-8 years help their parents in the field. Reaching the age of 15-16 years, they are well capacitated in the method of agriculture cultivation.

3.11: Contribution of Agriculture to State's Income

As per the Gross State Domestic Product (GSDP) at current price 2010-11 for the year 2004-05 the percentage share of agri. & allied sector was 34.75%, 12.77% from the secondary sector and 52.36% in the tertiary sector. It produces 62,000 MT in 1964-65 and increases to 386,390 MT in 2001-02. The gross irrigated area cropped once and more than once in the State is on a rise. During 2006-07, the gross irrigated area was 81100 hectare only, while the gross un-irrigated area during the same time period is 297842 ha. The total area of growing paddy crop is 199606 ha in 2001-2002 to 252077 ha in 2006-07, yielding approximately 240000 MT to 260000 MT respectively. In 2012-13 the area under rice production is 183330 Ha producing 405180 MT. The Table 3.7 reflects on the Gross State Domestic Product at current prices by industry of origin from

2004-05 to 2010-11 and the provisional and quick advances are detail for 2011-12 to 2013-14 in Nagaland as shown in the table.

Sub-total Primary Sector: It shows that the sub-total of Primary sector comprises of Agri. & allied and agriculture. In 2004-05 sub-total of Primary sector was Rs. 2, 03,624 and increased to Rs. 3, 08,251 in 2010-11. The total for Agriculture sector alone was Rs.1, 60,164, which is 78.65% of the total primary sector in 2004-05. In 2010-11, the contribution of agriculture sector has fallen to Rs. 23,873, which is only of 7.74% of the total primary sector in the State Gross Domestic Product at current prices.

Secondary Sector: The contribution of Secondary Sector to the total GDP at current prices was Rs. 74,518 lakhs in 2004-05, and it increased to Rs. 1, 54,241 in 2010-11.

Tertiary Sector: Tertiary sector contributes Rs.3, 05,742 lakhs to the Gross State Domestic Product at current prices in 2004-05. Its share now comprises of Rs. 7, 13,445 lakhs in 2010-11. The advance set for 2013-14 is Rs.11, 71,555 lakhs as indicated.

Population per Thousand: there is a steady rise in the population per thousand in the State from Rs.1, 781 in 2004-05 to Rs. 1,952 in 2010-11.

Per Capita Income (in Rupees): As shown in the table the per capita income (in rupees) is on an increasing trend from Rs. 32,784 lakhs in 2004-05 to Rs.60, 243 in 2010-11. It was estimated that it will advance to Rs. 77,833 lakhs in 2013-14.

Table 3.7: Gross State Domestic Product at current prices by industry of origin from 2004-05 to 2013-14 (Rs. in lakhs)

Sl.no	Industry	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Provisional	Quick	Advance
									2011-12	2012-2013	2013-14
A	Sub-total Primary	203624 (34.87)	212482 (32.25)	216642 (29.85)	220011 (27.25)	258229 (27.37)	282648 (26.85)	308251 (26.21)	336212 (25.46)	365643 (24.65)	397843 (22.39)
B	Secondary sector	74518 (12.76)	89922 (13.65)	106072 (14.62)	118691 (14.70)	160313 (16.99)	175249 (16.65)	154241 (13.12)	170195 (12.89)	187852 (12.67)	207399 (11.67)
C	Tertiary sector	305742 (52.36)	356364 (54.10)	402951 (55.53)	468793 (58.06)	525065 (55.64)	594780 (56.50)	713445 (60.67)	813940 (61.65)	929685 (62.68)	1171555 (65.94)
D	GSDP	583884 (100)	658768 (100)	725665 (100)	807495 (100)	943607 (100)	1052677 (100)	1175937 (100)	1320347 (100)	1483180 (100)	1776797 (100)
E	Population per '000'	1781	1810	1840	1870	1901	1932	1952	2012	2076	2142
F	Per capita income (in rupees)	32784	36396	3938	43182	49637	54486	60243	65624	71444	77833

Sources : State Domestic Product 2004-05 to 2010-11(2004-05 series), Directorate of Economics & Statistics, Nagaland: Kohima

3.12: KOHIMA DISTRICT PROFILE:

Kohima is situated to the south of the State; it is located at an altitude of 1444 m above sea level. It occupies a place of pride as it is the capital city of Nagaland. It is the ancestral home of the Angami and the Rengma tribe. One of the eleven Districts of the State, Kohima is the first seat of modern administration as the Headquarter of Naga Hills District (then under Assam) with the appointment of G.H.Damant as Political Officer in 1879. Nagaland became a full-fledged State on 1st December1963; and Kohima was christened as the State capital. Since then, parts of Kohima have been carved out twice -once in 1973 to create Phek District, and in 1998; when Dimapur was declared as a separate District.

Table: 3.8: Classification of land uses in Kohima District (2012-13)

Sl.no	Classification	Area in Ha
i.	Geographical Area	311400
ii.	Reporting area for Land Utilization statistics (1 to 5)	159500
1	Forest	49050
2	Area under non agricultural uses (a+b+c)	750
A	Water logged land	NA
B	Social Forestry	750
C	Land under still water	NA
3	Not available for cultivation (a+b)	21500
A	Land put to non Agricultural uses	20850
B	Barren and uncultivable Land	700
4	Other Uncultivable land excluding fallow land (a+b+c)	19865
A	Permanent pasture and other grazing land	500
B	Land under miscellaneous tree crops & groves not included in net area sown	7365
C	Culturable Waste Land	12000
5	Fallow land (a+b)	53036
A	Fallow Land other than current fallow	48215
B	Current fallow	4820
6	Net area sown (7-8)	13888
7	Total cropped area (6+8)	14438
8	Area sown more than once	550
Iii	Net irrigated area	7500
Iv	Gross irrigated area	7540

Source : District Agriculture Office, Kohima (2014)
Note : NA - Not Available

Kohima has the advantage of being centrally located - being bounded by the State of Assam in the west, Wokha District in the north, Zunheboto and Phek Districts in the east and Manipur State in the south. Kohima has an area of 3114 sq.km. Kohima has a pleasant and moderate climate, during summer from July to August; temperature ranges on an average of 80-90 Fahrenheit. Heavy rainfall occurs during summer and Kohima receives an average annual rainfall of 2000 mm. The total population of the District stands at 270063 (according to 2011 census); controlled by 12 administrative circles with 4 Rural Development (RD) Block, covering 180 inhabited villages. The table below indicate the classification of land use in Kohima District during 2012-13.

Table 3.9: Estimated no. of parcel per operational holding and average area per parcel by size groups in Kohima District

Size groups(ha)	Total holding		No. of parcels				
	number	area	Within the village of resident	Total no. of parcel	Average no of parcel per holding	Average area per parcel	Average area per holding
Below 1.02	130 (0.60)	65 (0.05)	`130 (0.26)	130 (0.46)	1	0.5	0.5
1.0-1.99	2448 (11.47)	2448 (2.20)	4148 (8.35)	4148 (14.81)	1.69	0.59	1
2.0-3.99	6813 (31.93)	18168 (16.33)	13913 (28.03)	13913 (49.69)	2.04	1.31	2.67
4.0-9.99	8638 (40.48)	51468 (46.27)	21638 (43.59)	21638 (77.28)	2.5	2.38	5.96
10 and above	3307 (15.49)	39054 (35.11)	9807 (19.75)	9807 (35.02)	2.97	3.98	11.81
All group	21336 (100)	111213 (100)	49636 (100)	27998 (100)	10.2	2.24	5.21

Source : Input survey 2006-07
Note : Figures in the parenthesis are percentages

Nearly 75% of the population of the District depends on agriculture. People practice both jhum and terrace wet cultivation. Terrace fields are cut from the slope of

the hills and irrigated with running water from the stream. Small dams (local dialect Zabou) are constructed, where rain water is collected to irrigate the paddy fields. "Zabou system" has the advantage of settled agriculture cultivations, about 13000 hectares of Kohima are under settled cultivation in 2001.While Jhum cultivation was 1, 26,036 hectares in Kohima District alone, out of 9, 17,087 hectares was under jhum cultivation in the State in 2001, that is 50% of land area are under wet/ terrace cultivation and nearly 44% of land under jhum in the District. Kohima District has several advantages of been the capital city of the State and has 23 different banking branches. The banks are mostly located within the District headquarter or State capital of Kohima. The number of land holding is highest among the semi marginal farmers and medium farmer with 6813 and 8638 numbers ranging from 2.67 ha to 5.96 ha per holding respectively as shown in the table 3.9 above. We can see in closer details the agricultural and related activities of the District at the grassroots level in Chapter 4 and Chapter 5.

3.12.1: Kohima Block Level profile:

Kohima block has the total population of 116870 (2011census), covering 24 wards and villages. It is situated in a wholly hilly terrain of 25° 32 N to 25°52 N latitude and 93° 56 E to 94° 18 E longitudes. It is the original homes of the Angamis, but now due to urbanization, and the advantage of been the District headquarter and the location of the State's capital, it is the home of all Naga tribes. Kohima RD block is bounded by the Rengmas of Tseminyu, the Semas of Pugoboto in the North, Kikruma and Chozuba block of Chakhesang in the east, Medziphema in the west and the Jakhama Block in the south.

Kohima RD block consisted of the north-eastern part of Kohima District and the geographical character is such that, it is perfect for agriculture cultivation. People mostly practiced terrace cultivation on hill slope, irrigated with running water from the nearby streams and rivers. The District receives a good amount of rainfall ranging from 2000 mm annually and people depend highly on monsoon rain for cultivation. The soil covers on the slope are generally thick and fertile for cultivation, terrace fields are irrigated with small and tiny hill streams and springs. Multiple cropping or crop rotation is hardly practice resulting in low utilization of land for agriculture. Individual

land ownership system is more common among the Angamis and the Chakhesang and there are only few cases of property held jointly by clans. However, the data shows that the land holding is characterized by high fragmentation of small land holding ranging from 0.5 ha as indicated in table 3.10.

Table 3.10: Profile of Kohima Rural Development Block and selected Villages 2014

Name	No. of farming HH	No. of farming population	Paddy (Ha)		Other crops (Ha)		Total Crop Area (Ha)	Net area sown (Ha)	Area available for cultivation. (Ha)	Irrigated Area(Ha)		Un-irrigated area (Ha)
			WTRC	Current Jhum	WTRC	Current Jhum				Net Irrigation	Gross irrigation	
Kohima block	17484	109878	6894	1318	286	2422.9	10920.9	10634.9	36100	6894	7180	3740.9
Kohima	2500 (14.29)	15,160 (13.79)	559 (8.10)	10 (0.75)	20 (6.99)	107 (4.41)	696 (6.37)	676 (6.35)	1950 (5.40)	559 (8.10)	579 (8.06)	117 (3.12)
Chedema	335 (1.91)	1320 (1.20)	145 (2.10)0	25 (1.89)	3 (1.04)	20 (0.82)	193 (1.76)	190 (1.78)	900 (2.49)	145 (2.10)	148 (2.07)	45 (1.20)

Source : District Agriculture Office, Kohima 2014
Note : Figures in the parenthesis are percentages

The basic socio-demographic profile of Kohima District with particular reference to the study villages are indicated in detail in table 3.11. It has 32.01% of the population in the District. About 51.81% of the populations in the block are male and 48.18% of the populations are female. The total number of household in Kohima block is 6138 household as per 2011 census. The literacy rate of the block level is 78.88% and indicates that male literacy is higher than that of female literacy in the area with 42.07% male and 36.81% female literacy rate respectively. The main cultivator comprised of only 1.12% of its total population, while the main agriculture laborer is only of 0.16%. The other main workers consisted of 31.50% of its total population. The demographic profile of Kohima village and Chedema village is reflected in the table, we shall discuss the detail of other aspects one by one in the following paragraph.

Table 3.11: Demographic Profile of Kohima RD Bock and the selected Villages (2011 Census)

Sl. no	Items	Nagaland	Kohima District	Kohima Block level	Kohima Village	Chedema Village
1	Population	1980602 (100)	365017 (100)	116870 (100)	31468 (100)	2177 (100)
a.	Male	1025707 (51.78)	140118 (38.38)	60551 (51.81)	15636 (49.68)	1100 (50.52)
b.	Female	954895 (48.21)	129945 (35.59)	56319 (48.18)	15832 (50.31)	1077 (49.47)
2	Total no of household	396002	54391	26138	6748	340
3	Literacy	1586660 (80.11)	312381 (85.58)	92187 (78.88)	23663 (75.20)	1663 (76.43)
i.	Male	854311 (83.29)	125097 (89.28)	25473 (42.07)	6099 (39.01)	451 (41.06)
ii.	Female	732308 (76.69)	105983 (81.56)	20731 (36.81)	5728 (36.18)	380 (35.36)
4	Cultivators	420379 (21.22)	38017 (10.41)	1314 (1.12)	1480 (4.70)	287 (13.18)
5	Agri. Laborer	22571 (1.13)	911 (0.24)	195 (0.16)	175 (0.55)	35 (1.60)
6	Other main workers	288704 (14.57)	59349 (16.25)	36821 (31.50)	8606 (27.34)	368 (16.90)

Source : Statistical handbook of Nagaland 2011, Directorate of Economics & Statistics Nagaland; Kohima.
: Census 2011 Villages-data; Directorate of Census Govt. of Nagaland.
Note : Figures in the table indicate no. of households, and in parenthesis are percentages
: NA- Not Available

3.12.2: Kohima Village profile

Kohima Village was originally known as Kewhira formally named after the man "Whio" who chooses the place for settlement. Britishers later adopted the name Kohima from Kewhira. Kohima village is also known as the largest village in Asia, and is inhabited with the population of 31568 and 26138 household according to 2011 census. The village is divided into four administrative units or Khel mostly basing on major

clans. The power of village administration is vested with the Village Council (VC) and the Village Development Boards (VDBs), these two bodies looks into the core developmental activities of the village and has the final authority to pass judgment towards any law breaker.

Table 3.12: Basic Infrastructure Possession of Kohima Village

Sl.no	Facilities	Categories	NO.
1	Educational facilities	Primary school	4
		Upto Higher secondary school within the village	3
		College	1
2	Health facilities	Primary Health Centre	1
3	Others	Community hall	1
		Tourist lodge	1
		Women society's building	3
		Church	4
		Angawadi centres	4
4	Nearest Bank	SBI-0KMs	1
		CBI-1/2 KM	1

Source : Kohima Village Council (VC) 2013-14

Geographical Feature

It is located on a high ridge surrounded by mountains and blessed with pleasant climate throughout the year. People depend mostly on spring and rain water for cultivation and for consumption purposes. The people are very cosmopolitan, and have adopted intensive agricultural practices and market condition for their livelihood.

3.12.3: Village Profile: Chedema Village

To the eastern parts of capital city (Kohima), Chedema is located at a distance of 7 km, inhabited with the population of 2097 according to 2011 census. Under the name of Chedema (452 household, 2011census), the village has branch out two sub-villages: Chedema model village housing atleast 62 household and 390 houses in the original old settlement of the village. Almost 95% of the total household practices agriculture mostly wet and dry terrace cultivation. Jhum cultivation is rarely practice as of now,

paddy cultivation is practice for self consumption and people are engaging more on marketable cash crops, fruits such as banana, oranges, papaya, guava and other vegetables as these are highly demanded in the market. Some of the major crops grown in the village are paddy as the main crop, maize, beans, yam, potato, cabbage, tomato, ginger etc. "The soil is fertile and the application of fertilizers and pesticides are not know accept the locally available manures like husk and dung which are available and free " said the Village headman. Cattle farm has also become a successful agri business because people besides the diary products all kinds of vegetable grow very well in the dung and are of high market value. Around 30-40 families in the village have cattle farms which are jointly kept and nearly 50% of the household rear 1-2 pigs, 15-20 chicks in a year mostly for self-consumption.

Table 3.13: Basic Infrastructure Possession of Chedema Village

Sl.no	Facilities	Categories	No.
1	Educational facilities	Primary school	4
		Middle school	1
2	Health facilities	Sub-centre	1
3	Others village properties	Community hall	1
		Tourist lodge	1
		Women society's building	1
		Church	4
		Angawadi centres	3
4	Nearest Bank	SBI-7 KMs	1

Source : Chedema Village Council (VC) 2013-14

3.13: PHEK DISTRICT PROFILE:

PHEK District is one of the oldest Districts curved out of Kohima District in 1973, with its head-quarter at Phek. The District has the land area of 2026 sq.km and shares its boundary with Kohima in the West, Myanmar in the East, Tuensang and Zunheboto in the north and Manipur in the south. It is located at an altitude of 1, 524 mtrs above sea level. Phek District has the population of 1, 63,294 (2011 census) inhabited by Chakhesang, comprising of Pochuri, Chokri, Kheza, Poumai, Kuki, and Sema communities. The District is subdivided into 5 (five) Rural Development (RD) Blocks with 14 (fourteen) administrative circles.

More or less, Phek District has similar methods of agricultural practice with the District of Kohima. Both jhum and terrace cultivation are widely practice, with nearly 21000 ha under jhum cultivation and 15000 ha of area for terrace or settled agricultural cultivation respectively in 2001. About 91% of the population depends on agriculture for their livelihood. The soil is generally fertile with a good climatic condition throughout the year.

Table: 3.14: Classification of land uses in Phek District (2012-13)

Sl.no	Classification	Area in Ha
I	Geographical area	202600
Ii	Reporting area for land utilization statistics(1 to 5)	165511
1	Forest	56593
2	Not available for cultivation(A+B)	37613
A	Area under non-agricultural uses(a+b+c)	37103
A	Water logged area	312
B	Social forestry	35100
C	Land under still water	417
B	Barren and uncultivable land	510
3	Other uncultivated land excluding fallow land(a+b+c)	30544
A	Permanent pasture and other grazing land	790
B	Land under miscellaneous tree crop & groves not included in net areas sown	20794
C	Culturable wasteland	8960
4	Fallow land(a+b)	21794
A	Fallow land other than current fallow	10414
B	Current fallow	11380
5	Net area sown(6-7)	20757
6	Total cropped area(5+7)	21364
7	Area sown more than once	607
Iii	Net irrigated area	9983
Iv	Gross irrigated area	9987

Source : District Agriculture Office (DAO), Phek (2014)

Taking advantage of it the Department of Agriculture has categorized the District into potentially different zone for cultivation vis- Pfütsero for vegetables, passion fruits and cardamom; Chozuba area for passion fruit, tea, kholar, and cardamom; around Phek District headquarter for soybean, tea, kholar and cardamom and Meluri for ginger and maize. The land utilization under agriculture is indicated as under:

The pattern of land ownership is such that both individual and community ownership exist. An individual land owner has the sole right to cultivate or sell away the land, but the community lands are jointly owned and depend upon the decision of every member.

Table 3.15: Estimated no. of parcel per operational holding and average area per parcel by size groups in Phek District

Size groups(ha)	Total holding		No. of parcels	Total no. of parcel	Average no of parcel per holding	Average area per parcel	Average area per holding
	Number	area	Within the village of resident				
Below 1.02	3207 (14.23)	1693 (2.32)	7507 (10.20)	7507 (10.20)	2.34	0.23	0.53
1.0-1.99	3724 (16.52)	4655 (6.40)	7824 (10.63)	7824 (10.63)	2.10	0.59	1.25
2.0-3.99	9360 (41.53)	24069 (33.12)	33060 (44.95)	33060 (44.95)	3.53	0.73	2.57
4.0-9.99	5249 (23.39)	27074 (37.25)	19349 (26.31)	19349 26.31)	3.69	1.40	5.16
10 and above	955 (4.23)	15174 (20.88)	5795 (7.88)	5795 (7.88)	5.82	2.62	15.25
All group	22535 (100)	72665 (100)	73535 (100)	73535 (100)	3.26	0.99	3.22

Source : Input Survey 2006-07, Directorate of Agriculture, Nagaland; Kohima
Note : Figures in the parenthesis are percentages

Similarly, every individual in the society inherit and buy plot/plots of land which are protected by the customary law that are orally passes through tradition from one generation to other. Hence, landless farmers are not found in the District. However,

fragmentation of land holding is very common in the District which is indicated as under in table 3.15, that 14.23% of the households in Phek District constitute the small land holding i.e. a family having an area of less than 1.02 ha. Not much higher in number is the proportion of families holding an area of 1.0 – 1.99 ha composing 16.52%. Proportion of people holding 2 – 3.99 ha constitutes the highest in the District with 41.54%. The number of people holding 4 – 9.99ha constitutes 23.29%, while proportion of people holding more than 10 ha constitutes only 4.3%.

The area of land possessed by the small holders is a mere 1693 ha or 0.53 ha per family. At the other end of the spectrum are the largest land holders possessing a huge 15174 ha or 15.25 ha per family. A huge disparity thus exists between the Large Farmer and the Marginal Farmer. The figure also shows that 4.3% of the families (Large Farmers.) hold 20.88% of the total land. This rich few also holds land much higher than the others, as the indicated in the last column. In fact, the same can be said of all the categories – that they are a category in themselves e.g. the Small Farmer, land has to be multiplied more than two times to reach the next level, while the same can be said of the other two categories. Disparity in land holding is thus a feature of land holding system in Phek District. Considering that land has been passed on from one generation to the next through customary laws, how the huge disparity in the landholding has occurred is a question that perplexes and requires further research though outside the scope of this thesis.

The table also shows that all the lands are owned by the families within the villages itself and there is no selling-out of land or buying-in of land to villagers of other villages. This may be due to the strong village-community feeling and pride attached to the piece of land owned by each individual/family, so that buying and selling of land takes place only within the villagers of a village themselves. That land ownership is fragmented also points to the fact that there is 'buy and sale' of land though it may be only within a village; inheritance practices of dividing land among male siblings may also have led to the fragmentation of land holding.

People celebrate with pomp and gaiety the different festivals such as Sükrünye after the harvest, Tsakhanye for sowing and Türhinye for weeding to proceed on to the

next level of activity after the paddy transplantation is over. After the main harvest of the paddy crop, people engaged themselves in carpentry and black smithy. Other sources of livelihoods are hand-weaving industry in which people mostly the women engaged themselves in designing of different and distinctive costumes. These include the wrappers, shawls, waist-cloths, girdles, scarf, and skirts of all modern style and designs of splendid color combination. Another, growing industry is the bamboo works and woodworks of different designs on primitive lines, commonly practice among the men folk.

Though the District is endowed with different natural resources, rich flora and fauna along with good climatic conditions, the District lack several infrastructural facilities to expose its resources. The modern methods of farming with better equipment, fertilizers irrigation facilities and better seeds are negligible. Moreover, due to lack of marketing facilities coupled with ignorance, the farmer produces just that what is enough for self-consumption. With the introduction of agriculture finances, available in several packages, it is expected to encourage our farmers to improve and fully utilize the potentiality of the land. In 2011, there are 8 different banking branches in the District, for a total population of 163294 (2011 census) [78], which means (1) bank is at the service of 20412 people.

3.13.1: Phek RD Block Level

Phek is situated at a distance of 145 kms away from the State capital Kohima. Phek block covers 15 villages and 12 wards under Phek town. It has a population of 27407, within 12735 household as per 2011 census. However, the District Agriculture Office covers 21 villages with 18823 farming population consisting of 4054 farming household under Phek block. Out of the total geographical area of 42306 Ha, the total cropped area of the block is 3142 and Net area sown of 2797 Ha with an irrigated area of 2509 Ha in 2014. The detail profiles of the block along with the selected villages are as shown in 3.16 and 3.17 respectively. People mostly practice terrace cultivation and it can further be categories as i) dry terrace cultivation and ii) wet terrace cultivation. These fields are irrigated through water canals from hill top to lower fields, or small

[78]. Statistical Handbook of Nagaland (2011), Directorate of Economics and statistics, Government of Nagaland.

dams over the running streams, lift irrigation with manuals or mechanical power devices. Dry terrace cultivations are irrigated only during the paddy plantation from June to October, but wet terrace fields are irrigated throughout the year with natural spring water.

Table 3.16: Profile of Phek RD Block and Selected Village 2014

Name	No. of farming population	No. of farming household	Geographical Area(Ha)	TRC Paddy		Jhum Paddy		Total cropped area(Ha)	Net area sown(Ha)	Total area available for cultivation(Ha)	Irrigated area (Ha)	Net Irrigated area (Ha)	Gross Irrigated area (Ha)	Un-Irrigated area (Ha)
				Area(Ha)	Production (MT)	Area (Ha)	Production (MT)							
Phek Block	18823	4054	42306	2509	6411	288	576	3142	2797	6691	2509	1102	1507	905
Phek Village	3005 (15.96)	658 (16.23)	4369 (10.32)	285 (11.35)	793 (12.36)	28 (9.72)	56 (9.7)	341 (10.85)	313 (11.19)	608 (9.08)	285 (11.35)	90 (8.16)	195 (12.93)	90 (9.94)
Ketsapo	2360 (12.53)	550 (13.56)	5316 (12.56)	254 (10.12)	508 (7.92)	40 (13.88)	80 (13.88)	323 (10.28)	294 (10.51)	810 (12.10)	254 (10.12)	114 (10.34)	140 (9.28)	85 (9.39)

Source : District Agriculture Office (DAO), Phek 2014
Note : Figures in the table indicate no. of households and in parenthesis are percentages

Phek RD block is bounded by Pochuri tribes of Meluri block in the east, Kheza of Pfutsero, the Chokri of Chozuba block in west and Zunheboto District in the northern part. The block covers 13 villages and 14 TC wards and UR. People depend only on agriculture due to the availability and fertility of the land. Both jhum and terrace cultivation are practice in wide scale, the soil is fertile for crops particularly rice, maize, sugarcane, oranges, cabbage, job tears., millets, yam, banana, papaya, patience fruits, kholar, soya bean, beans, cardamom, garlic , chilli, tomato and ginger. Besides, there are several edible plants that are grown wide and are now greatly valued and preserved due to its high demand. Tizu River which is known as the longest river of the State provides an ample opportunity for the people of the area to practice wet terrace field

along with fisheries and other vegetable cultivation. Nearly 90% of the people depend on agriculture.

Table 3.17: Demographic Profile of Phek District and selected Villages (2011 census)

Sl. no	Items	Nagaland	Phek	Phek RD block	Village A : Phek village	Village B: Ketsapo village
1	Population	1980602 (100)	163294 (100)	27407 (100)	2744 (100)	2050 (100)
a.	Male	1025707 (51.78)	83684 (51.24)	14672 (53.53)	1351 (49.23)	1072 (52.29)
b.	Female	954895 (48.21)	79610 (48.75)	12735 (46.46)	1393 (50.76)	978 (47.70)
2	Total no of household	39002	36639 (22.43)	6091 (22.22)	694 (25.29)	534 (26.04)
3	Literacy	1586660 (80.11)	1292145 (79.13)	19506 (71.17)	1816 (66.18)	1241 (60.53)
3.i	Male	854311 (83.29)	70738 (84.53)	11217 (40.92)	988 (36.00)	723 (35.26)
3.ii	Female	732308 (76.69)	58513 (73.50)	8289 (30.24)	828 (30.17)	518 (25.26)
4	Agriculture laborer	22571	1311 (0.80)	63 (0.22)	17 (0.61)	1 (0.04)
5	Cultivator	420379	44069 (26.98)	5817 (21.22)	1029 (37.5)	915 (44.63)

Source : Statistical handbook of Nagaland 2011: Directorate of Economics & Statistics Nagaland; Kohima. : Census 2011 Villages-data, Department of Census Govt. of Nagaland.
Note : Figures in the table indicate no. of households, and in parenthesis are percentages
: NA- Not Available

3.13.2: Village Profile: Phek Village

Phek Village is located at a distance of 7 kms way from its District headquarter Phek, and has an inhabitant of 2744 with 694 household (2011 census). It is located at an average elevation of 1456m above main sea level. The village is subdivided into 10 different Khel for easy administration. Each Khel has a representative to the Village

council (VC) and the Village Development Board (VDB). The village has the following infrastructural facilities.

Table 3.18: Basic Infrastructure Possession of Phek Village

Sl.no	Facilities	Categories	Govt.
1	Educational facilities	Primary school	4
		High school	2
2	Health facilities	Sub-centre	1
3	Others	Community hall	1
		Tourist lodge	1
		Women society's building	2
		Church	2
		Angawadi Centres	7
1	Nearest Bank	NSCB-7 KMs	1
		NSCB-7 KMs	1

Source : Village Development Board (VDB), Phek Village 2013-14

The adjoining areas of Tizii and Lanye rivers provide a fertile area for cultivation. Individual land ownership is mostly common for settled terrace cultivation, community land or clan lands are usually of vast forest and jhum fields. Approximately 95-96 % of the household cultivate rice either in the terrace fields or jhum fields. According to the survey conducted by the Land Resource Development, 600 households practices Terrace Rice Cultivation (TRC) in 2009 and about 70 families practices jhum. This terrace fields are of two types:

i. **Wet Terrace Cultivation (WTC):** In this types of cultivation the hill slope are constructed in the form of elongated benches of terrace fields and irrigated with running water from the nearby river and streams throughout the year. After the harvest of paddy, these fields are kept as fishery and snails rearing.

ii. **Dry Terrace Cultivation (DTC):** The terrace fields are irrigated only during the rainy season for rice cultivation, but after the harvest, these fields are utilize for growing vegetables like cabbage, onions, peas, carrots, tomato, potato, and pumpkin.

Winters are usually cold and foggy, while summers are hot and pleasant, all kinds of fruits and are grown without any fertilizers except in a few parts of Pfutsero. People grow mostly paddy, maize, vegetables and fruits for self-consumption purpose, the thought of selling their surplus product rarely exist in the mind until recently.

3.13.3: Village Profile: Ketsapo Village

Ketsapo Village is located at a distance of 9 km from the District headquarter Phek and has a population of 2050 with 534 household according to 2011 census**.** The village is subdivided into 4(four) administrative ward called khel. With the increasing developmental activity of government, the following facilities are now available with the village community.

Table 3.19: Basic Infrastructure Possession of Ketsapo Village

Sl.no	Facilities	Categories	No
1	Educational facilities	Primary school	2
		High school	1
2	Health facilities	Sub-centre	1
3	Others	Community hall	1
		Women society's building	2
		Church	1
		Angawadi centres	4
4	Nearest Bank	NSCB-9 KMs	1
		SBI-9 KMs	1

Source : Ketsapo Village Council (VC) 2013-14

Till today agriculture is widely practice by every household. Nearly 65-70% of the household practices Wet Terrace Cultivation and about 30-35% of the household practice Dry Terrace Cultivation along with jhum cultivation. The age old practice and methods of paddy cultivation is common because of the rich fertility of the land, people have adapted it amicably that most of them are not willing to give up for another.

3.14: Basic Household Information

This sections deal with the basic characteristic of household surveyed in the two Districts of Kohima and Phek as tabulated under in table 3.20.

Table: 3.20: Basic Household Information

Particulars		Kohima District		Phek District		All
		Kohima village	Chedema village	Phek village	Ketsapo village	
Total household surveyed out of the total household		59 (100)	49 (100)	67 (100)	50 (100)	225 (100)
Total household borrowing from institutional source out of the total surveyed		21 (35.59)	40 (81.63)	48 (71.64)	28 (56.00)	137 (60.88)
Total household not borrowing from any sources (Self-financing)		38 (64.40)	9 (18.36)	19 (28.35)	22 (44.00)	88 (39.11)
Family size		5	5	6	7	5.75
Educational status of the farmer	Illiterate	20 (33.89)	20 (40.81)	20 (29.85)	18 (36.00)	78 (35.00)
	upto matriculation	29 (49.15)	24 (48.97)	34 (50.74)	30 (60.00)	117 (52.00)
	Above matriculation	10 (16.94)	5 (10.20)	13 (19.40)	2 (4.00)	30 (13.00)
Annual average paddy cultivation per household		7 bags*	10 bags*	16bags*	24 bags*	14.25 bags

Source : Field survey 2014
Note : Figures in the table indicate no. of households and in parenthesis are percentages
*A bag contains 50 Kg of paddy; it is a unit of measure for the farmer to quantify his harvest

About 225 farming household are surveyed across the 2 Districts of Phek and Kohima, which consisted of 59 farming household in Kohima village, 49 farming household in Chedema village totaling to 108 farming household in Kohima District. In Phek District 117 farming household are surveyed and it consisted of 67 farming household in Phek village and 50 farming household in Ketsapo village.

Of the total 225 household surveyed, about 60% of borrowing households from institutional sources are identified and 39.11% of them are self- financing and are not borrowing from any source. In Kohima village 35.59% out of the total surveyed are borrowing from institutional source for agriculture. About 64.40% of the household are not borrowing from any source for agriculture purposes. In Chedema 40 borrowing

household are surveyed comprising of 81.63% out of the total 49 household, which means that 18.36% of the farmers are self-financing. Whereas, in Phek village, 71.64% of borrowing household are surveyed out of the total 67 household and therefore 28.35% of the farmers are self-financing and not borrowing from any sources. In Ketsapo village, 56% borrowing household are surveyed and 44% of them are self-financing.

The household information comprises of:-

Family Size: The average family size across the study villages is 5.75, which comprises of 5 members in Kohima village and Chedema village respectively. While in Phek village and Ketsapo village the family size range between 6 to 7 members.

Educational Level of the Farming Household: The educational status of the farming household indicated that 35% of the head of the farming household are illiterate, 52% of them read up to matriculation and 13% of them above matriculation. Similarly, in Kohima village, out of the total 59 farming household surveyed about 33.89% are illiterate 49.15% read up to matriculation and about 16.94% of the head of the family of the farming household read above matriculation. Whereas, in Chedema village, out of the total 49 household surveyed 40.81% are illiterate 48.97% read up to matriculation and only 10.20% read above matriculation. However, in Phek village, out of the total 67 farming household, 29.85% are illiterate, 50.74% are up to matriculation and 19.40% are above matriculation. In Ketsapo village out of 50 farming household, 36% of the head of the farming household are illiterate, 60% are up to matriculation and 4% are above matriculation.

Wealth of the Household: The wealth of the household is categorizes as average annual income, the fixed assets of the household and the movable assets of the household. The annual average paddy cultivation is 14.25% bags[79].

Size of Landholdings: The size of land holding occupies an important place in the study of agriculture system; in the survey it was found that the farming households are scatter over different size of land holding. This is shown in table 3.21 below:

[79] . 1 bag of paddy is equivalent to 50 kg

Table 3.21: Size of Land Holding Among Different Categories of Farmers in Kohima and Phek Districts

Categories	Total (Kohima Dist.)	Total (Phek Dist.)	All
Marginal Farmers	5 (4.62)	1 (0.85)	6 (2.66)
Small Farmers	20 (18.51)	14 (11.96)	34 (15.11)
Semi Medium Farmers	36 (33.33)	49 (41.88)	85 (37.77)
Medium Farmers	44 (40.74)	37 (31.62)	81 (36.00)
Large Farmers	3 (2.77)	16 (13.67)	19 (8.44)
TOTAL(dist. wise)	108 (100)	117 (100)	225 (100)

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

Marginal Farmers: About 2.66% of the respondent belongs to marginal farmers with less then1 hectare of land holding.

Small Farmers: About 15.11% are having 1.02 to 1.99 hectares of land and are grouped under Small Farmer.

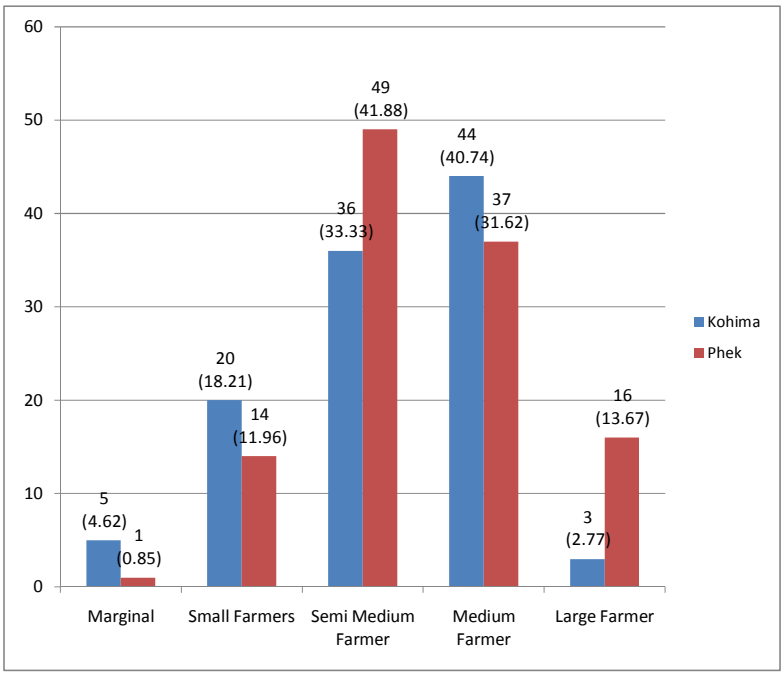
Semi Medium Farmers: Those farmers holding between 2.00 to 3.99 hectares of land are Semi Medium Farmers (SMF) comprises of 37.77%.

Medium Farmers: Medium Farmers (MF) with 4.00 to 9.99 hectares of land holding are 36% of the household surveyed.

Large Farmers: Large Farmers (LF) with 10 hectares and above comprises of 8.44% only.

The diagram below shows the categories of farming household in Kohima and Phek Districts.

Figure 3.4: Categories of Farming Household in Kohima District and Phek District



Kohima District: About 4.62% of household belongs to Marginal Farmer, 18.51% Small Farmers, 33.33% Semi Medium Farmers 40.74% Medium Farmers and 2.77% of Large Farmers.

Phek District: In Phek District 0.85% of the household are Marginal Farmer, 11.96% of the household belongs to Small Farmers. And about 41.88% of the household are Semi Marginal Farmers, 31.62% are Medium Farmers and 13.67% are Large Farmers in Phek District. The village-wise details of Kohima District are also tabulated below in table 3.22.

Table 3.22: Size of Land Holding Among Different Categories of Farmers in Kohima Village and Chedema Villages under Kohima District

Categories	Kohima	Chedema	All
	No. of Household	No. of Household	
Marginal Farmers	3 (5.08)	2 (4.08)	5 (4.62)
Small Farmers	9 (15.25)	11 (22.44)	20 (18.51)
Semi medium farmers	15 (25.42)	21 (42.85)	36 (33.33)
Medium Farmers	30 (50.84)	14 (28.57)	44 (40.74)
Large Farmers	2 (3.38)	1 (2.04)	3 (2.77)
TOTAL (Village wise)	59 (100)	49 (100)	108 (100)

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The table indicate that in Kohima village 5.08% of the household belongs to Marginal Farmers, 15.25% of them are Small Farmers, 25.42% of are Semi Marginal Farmers, 50.84% are Medium Farmers and 3.38% Large Farmers. Whereas, in Chedema village, about 4.08% of the household are Marginal Farmers, 22.44% are Small Farmers, 42.85% are Semi Medium Farmers, 28.57% of Medium Farmers and 2.04% belongs to Large Farmers as indicated in the table.

Table 3.23 reflects on the village wise details on size of landholding among different categories of farmers in Phek District. In Phek village, 1.49% of household surveyed belongs to Marginal category, 14.06% are Small Farmers, and the Semi Medium Farmers comprises of 40.29% and are among the largest farming households, the Medium Farmers consisted of 26.86% and the Large Farmers of only 17.91%. Whereas, in Ketsapo village none of the household surveyed belongs to the marginal category. The Small Farmers consisted of 10.00%, the Semi Medium Farmers with 44.00% off the household, the Medium Farmers 38.00%, and 8.00% belongs to Large Farmers.

Table 3.23: Size of Land Holding Among Different Categories of Farmers in Phek and Ketsapo Villages under Phek District

Categories	Phek Village	Ketsapo Village	
	No. of Household	No. of Household	All
Marginal Farmers	1 (1.49)	--	1 (0.85)
Small Farmers	9 (14.06)	5 (10.00)	14 (11.96)
Semi Medium Farmer	27 (40.29)	22 (44.00)	49 (41.88)
Medium Farmers	18 (26.86)	19 (38.00)	37 (31.62)
Large Farmers	12 (17.91)	4 (8.00)	16 (13.67)
TOTAL	67 (100)	50 (100)	117 (100)

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

3.15: Distribution of Agriculture Land Holdings

The farming household has several parcel of land holding which includes the reserve forest usually located in different places ranging to an approximately area of 7.3 – 14 acres of land. Besides, most of these reserve forest are joint property, usually owned by family relations, clans, and khel. They feel that the existence of such ownership of property strengthens the bonds of family relationships, clans or khel. A large of forest reserve cum wild life sanctuary measuring 20 hectare or more approximately belongs to the village community of Ketsapo in Phek District.

Individual land Ownership: Individual landholding dominates in the 2 Districts (Kohima and Phek). Out of the total 225 household surveyed, about 205 households which mean 80.39% of the household are operating individually owned land. In Kohima District 101 household are operating individually owned land out of 108 household surveyed i.e. 93.51% are individual land. In Phek District 104 household are operating individually owned land out of 117 household surveyed i.e. 88.88% are individual land ownership.

Table 3.24: Distribution of Land Ownership across Size Groups in Kohima and Phek Districts

Farm Size	Total No. Of Household surveyed	Individual Ownership			Joint Ownership			Operated Land	Av. Holding
		Kohima	Phek	Total	Kohima	Phek	Joint owner-ship		
Marginal	6 (2.66)	4 (3.96)	1 (0.96)	5 (2.43)	1 (14.28)	--	1 (5.00)	0.55	0.9
Small Farmers	27 (12.00)	17 (16.83)	7 (6.73)	24 (11.70)	2 (28.57)	1 (7.69)	3 (15.0)	1.79	1.9
Semi medium farmers	92 (40.88)	36 (35.64)	53 (50.96)	89 (43.41)	1 (14.28)	2 (15.38)	3 (15.0)	2.7	3.5
Medium Farmers	81 (36.00)	41 (40.59)	28 (26.92)	69 (33.65)	3 (42.85)	9 (69.23)	12 (60.0)	3.5	8.7
Large Farmers	19 (8.44)	3 (2.97)	15 (14.42)	18 (8.78)	--	1 (7.69)	1 (5.00)	5	12
TOTAL	225 (100)	101 (100)	104 (100)	205 (100)	7 (100)	13 (100)	20 (100)	13.54	5

Sources : Field survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

Joint Ownership: Joint ownership of property also still exists among the Naga, though very minimal. About 20 household surveyed are operating/ cultivating such property which mean 8.88% of the Farmers are cultivating on joint landownership. In Kohima, about 7 household are cultivating such land which is about 6.48% of the total household surveyed in the District. And in Phek District 13 household are found operating joint properties which are about 11.11% of the household surveyed in the District itself.

The asset possession of the household can be broadly classified into fixed and moveable assets of the study villages are reflected in Table 3.25 and 3.26 respectively.

Types of Houses: The table 3.25 indicated the type of houses and number of landholdings. About 27.55% of the household have pucca houses and about 72.44% of the farmers have Kucha house.

Table 3.25: Fixed Assets Possession in the Study Villages in Kohima District and Phek District

Particulars		Kohima District			Phek District			All
		Kohima village	Chedema village	Total	Phek village	Ketsapo village	Total	
Type of house	Total Household	59 (100)	49 (100)	108 (100)	67 (100)	5 (100)	117 (100)	225 (100)
	Pacca	24 (40.6)	13 (26.53)	37 (34.25)	19 (28.35)	6 (12.00)	25 (21.36)	62 (27.55)
	Kucha	35 (59.32)	36 (73.46)	71 (65.74)	48 (71.64)	44 (88.00)	92 (78.63)	163 (72.44)
Average no. of parcel holding per household		4	6	5	9	16	12.5	8.75
Average no of terrace of fields per household	Wet Terrace Field	0	1	0.5	1	3	2	1.25
	Dry Terrace Fields	1	1	1	1	1	1	1
Average no. of jhum fields		0	1	0.5	0.4	0	1	1.5
Average no of reserve forest or tree plantations		2	1	1.5	5	8	6.5	4

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

In Kohima District about 34.25% of the farmers have pucca houses, which consisted of 40.6% in Kohima Village and 26.53% in Chedema Village. About 65.74%of the respondents live in Kucha houses which comprises of 59.32%in Kohima Village and 73.46% in Chedema Village. Whereas, in Phek District 21.36 % of the respondents have pucca houses which consisted of 28.35% in Phek Village and 12.00% in Ketsapo Village. The respondents living in Kucha houses in Phek District comprises of 78.63%, which consist of 71.64% in Phek Village and 88.00% in Ketsapo village.

Land Holding: Every household possesses several parcel of land, consisting of a reserve forest, gardens, a lake/pond or wasteland in different locations. Most of the household surveyed possessed a reserve forest for firewood, as it is a well-known fact that there is no other source of energy, the reserve forest for firewood is as necessary as

food security in the villages. The average number of parcel land holding in each village varies from 4 to 5 plots in Kohima Districts and 12-13 plots of land in different location in Phek District. This indicates that there is high fragmentation of land holding in both the Districts. Terrace fields can be categorized as Wet- Terrace Rice Cultivation (WTRC) which are irrigated with natural spring water throughout the year, and Dry Terrace Rice Cultivation (DTRC) depending on monsoon rain and are irrigated only at the time of cultivation. It was found that WTRC is more commonly practice in Phek with each household possessing at least 2-3 wet terrace fields. Dry Terrace cultivation is equally a common practice in both the Districts. The practice of jhum cultivation is becoming very negligible in both the Districts. The average number of jhum cultivation is 1 in Kohima District and 0.4 in Phek District.

Table 3.26 indicated the value of household assets of the farmers in Kohima and Phek Districts. Agriculture is the most important occupation in the representative villages, and paddy constitutes the most important asset of the rural household. The average annual production of paddy ranges from 8.5 bags in Kohima District and 20 bags in rural areas of Phek District. The other asset possessions of the farmers are the domesticated animals, furniture, electronics goods and agricultural implements etc., for self-consumption and personal uses.

Table 3.26: Assets Possession in Kohima and Phek Districts

Districts	**KOHIMA**					**PHEK**				
Category	**MF**	**SF**	**SMF**	**MF**	**LF**	**MF**	**SF**	**SMF**	**MF**	**LF**
Paddy*	1/2	2	3 1/2	4	7	3	6	8	11	13
Livestock	1200	1720	4910	11790	13210	5710	7900	15623	17950	9070
Furniture	2790	3153	4421	6790	8093	2930	5979	8155	10371	13456
Electronics	1790	2900	5370	12800	17630	--	1900	4931	9723	11533
Agriculture implements	700	920	1570	1629	2120	1132	1974	3465	5768	4103

Source : Field Survey 2013-14

*Average quantity of paddy produced in a year is measured in terms of bags. A bag of paddy is equivalent to 50 kg of paddy.

People domesticate animals and grow vegetable attached to their houses. Kitchen gardens are common and an important practice of the village life, where several varieties of vegetables, fruits are grown. Furniture for family uses is an important asset and most of which are locally made. Electronic gadgets are found very handy and commonly used by every household in the village life too. In the rural villages, every household possessed the basic agriculture tools and equipment mostly made by local artisan, but no sophisticated machines for agriculture are found.

3.16: Recapitulation

The village life is characterized by subsistence method of farming where every household produces mostly paddy that is enough for self-consumption. Land is seen as an important asset of every family. There is no individual household without any cultivable land in Kohima and Phek Districts, though it is characterized by high fragmentation of land holding. About 91.11% of the household have individually owned land for cultivation and about 8.88% of joint land holding in the study villages. Common ownership of land belonging to the village community, khel or clan comprises of a few reserve forest and jhum fields. As indicated in the above tables, the Semi Medium Farmers and the Medium Farmers comprises the maximum number of household in the survey. About 37.77% of the household surveyed belongs to Semi Medium Farmer category and the Medium Farmer consisted of 36.00% in Kohima and Phek District.

Agriculture cultivation means indisputably rice cultivation only in the earlier era, the cultivation of other cash/commercial crops are gaining momentum in recent time with the growing market demand. Access to financial institutional has motivated the farmers to take up new methods of cultivation. However, it was observed that there is wrong conception about borrowing for agriculture activities. In the first phase of the survey, the farming household of the selected villages was conducted randomly. The result was that, 96% of the household are self-financing and are not borrowing from any sources. It was found that the borrowing households are shying away.

Lack of awareness on financial assistance leads to wrong conception of borrowing in the rural villages. Borrowing for agriculture purpose is considered a shame and disgrace to oneself. To conclude basing on this survey proves incomplete, therefore

the second phase of the survey was taken up along with supporting documents from the banking branches and emphasis more on those borrowing household to understand the practical reality and impact of borrowing in the farming household.

CHAPTER IV

AGRICULTURE FINANCE AND THE EXTENT OF CREDIT MARKET IN THE STUDY VILLAGES

4.1: Introduction

The methods and practice of permanent settled agriculture cultivation dates back to as early as c.10, 000 BCE in the fertile crescent of Egypt popularly regarded as the birth-place and cradle of civilization (Joshua J Mark, 2008)[80]. Crop rotation and irrigation system started during the middle ages boosting agriculture efficiency. History tells us that, animals such as buffalo and cows are used to do the work of the farmer. For quite a long time, crop and animals are interchanged as profit, labour services are exchanged for another man services or for animal services or goods etc. In India, agriculture is not just an occupation, but it is a way of life, about 52% of the total workforce is still employed by the farm sector, which makes more than half of the Indian population dependent on agriculture for sustenance (NSSO 66th Round). Since 1951, out of the total population of 361 million people in the country, agriculture provides employment to 98 million people contributing to a share of 55 per cent to the Gross Domestic Product (GDP) of the country. In 2010, the total workforce employed in the country is 427 million i.e. 58 per cent of the total population and contributing 15 per cent of share to the country's economy. Agriculture always occupies a place of pride to the Indian economy; the history behind the success of Indian agriculture system is attributed due to several factors such as the fertility of the land, the favorable climatic conditions and appropriate policy intervention and investment in the agriculture sector.

The present chapter highlights the extent of Government policy programme and its intervention into the Indian agriculture sector. It deals with the role of institutional and non-institutional sources of agriculture finance including the non-banking financial

[80]. Mark, Joshua J. (2009), "Fertile Crescent". Published under Creative Common Attribution-Non Commercial- Share Alike. www.ancient.eu/fertitle_Crescent/

intermediaries of the VDBs in Nagaland and analyzed on the factor determinants of institutional credit accessibility in the study villages using Logit model.

4.2: Indian Agriculture: Brief overview

On the eve of independence, India's agricultural sector played a dominate role in contributing about 1/4th of National income; it occupied a significant place in the export items of the country (Shinoj, P and V.C Mathur, 2008)[81]. In 2009-10, agricultural products accounts for 9.9% of the total export in the country. Besides, India enjoys a prominent place in the world export; about 14.3% of the world export of rice is from India, procurement of rice as on 1st February 2013 was 23.27 million tons (Agriculture Situation in India, 2013), other items such as tea comprises of 9% and spices 14.5% of the world export is from India during 2008[82]. About 60% of the total population is directly dependent on agriculture for their livelihood, since the pre-independence era (Economic Survey 2013: Indian agriculture largely a success story).

In the post-Independence era, Indian agriculture continues to play a significant role in the national economy; it grows at the rate of about 2.6% per annum. The progressed in output and yield in terms of land productivity is attributed not only due to the structural changes, but by a series of steps initiated by Government of India. The launching of Agricultural Price Commission, the Land reforms, investment in research and extension services, provision of credit facilities, improving rural infrastructure and other specific programme such as Intensive Agricultural District Programme, Intensive Agriculture Area Programme, Special Rice Production Programme, National Oilseeds/Pulses Development Project etc. brought about a substantial development in Indian Agriculture.

The sole objective of agriculture policies and program in the country under the five-year plans is to increase agriculture production by bringing more land under cultivation, increase the yield per hectare through intensive application of improve

[81]. Shinoj, P and V.C Mathur (2008*), "*Comparative Advantage of India in Agriculture Export Vis-A Vis Asia: A Post-Reforms Analysis". *Agricultural Economic Research Review*, Vol. 21, January-June 2008, pp. 60-66.

[82]. www.shodhganga.inflibnet.ac.in/.../14_chapter

inputs and to achieve food security and increase agrarian income. It also aims to reduce the rising pressure of population on agriculture (State of Indian Agriculture, 2011-12). To solve the problem of food crisis in India, the first five year plan gave the highest priority to agriculture sector and has allotted 31% of the total plan outlay on agriculture. In the second plan period the government laid emphasis on the industrial sector and allocated only 20% of the outlay to agriculture sector and experienced that the success of the entire plan for the economy depends on agricultural sector, and consequently, in third plan (1961-66) introduced Intensive Agricultural District Programme (IADP), the High Yielding Varieties Programme (HYVP) which usher in the green revolution.

The trend and progress in the food grain production and other major non-food grain crops production in the country from 1994-95 to 2013-14 is tabulated below in table 4.1.

Table 4.1: All India State Production of Food Grains and Major Non-Food Grain Crops (Thousand Tons)

Year	1994-95	1999-00	2004-05	2009-10	2010-11	2011-12	2012-13	2013-14
Rice	81814	89682.9	83131.7	89092.9	95979.8	104322	104399	106540
Wheat	65767.4	76368.9	68636.9	80803.6	86874	93903.6	92458.2	95907.1
Coarse cereals	29876.2	30331.4	33464.7	33549.1	43397.1	42008.5	40058.4	43054.7
Pulses	14037.6	13418.1	13129.5	14661.8	18240.9	17207.9	18446	19269.4
Food grains	191495.2	209801	198363	218107	244492	257442	255361	264771
Oil seeds	21336.7	20710.3	24353.5	24881.6	32479	30012.2	31006	32876.8
Cotton (Lint)	11887.6	11530	16428.6	24021.8	33000	35200	34000	36590
sugar cane	275539.9	299320	237088	292302	342382	357667	338963	350022
Raw Jute	9076.3	10550	10272.3	11817.4	10620.2	11569.1	11295.9	11580

Source : Agricultural Statistics at a Glance, Ministry of Agriculture, Government of India.
Notes : 1. Oilseeds data comprises total for nine oilseeds out of eleven in all.
: 2. Cotton data measured I thousand bales of 170 kg each.
: 3. Jute and Mesta data measured in thousand bales of 180 kg each.
: 4. All India data are inclusive of Union Territories.

The table indicates that, the total food grain production is on an increasing trend, and it shows that in 1994, the total food grain production increases from 191495.2 thousand tons to 264771 thousand tons in 2013-14. The production of Rice, Wheat and Coarse Cereals are also on an increasing trend. Similarly, the production of other non-food grains like oilseeds, cotton, sugar cane, raw jute etc. are also increasing at a significant level adding to the total production of the Indian Agriculture sector.

In the wake of globalization, despite of the large volumes in export, India is still not a major player in the world market except in the production of a few commodities such as rice, tea and species. It is therefore imperative for the country to improve upon the situation by enhancing trade competitiveness and achieving the status of net export commodities in which our country has a comparative advantage. However, during post-WTO period the situation of agriculture turned adverse, the growth rate in output of all crops decelerated from 2.93% to 1.57%. This decelerating growth trend in agriculture calls the attention of policymakers, researchers and economists to look into the matter more seriously, the characteristics of Indian agriculture system and the causes of the failure in the development policy for agriculture in greater details and to bring out an effective development strategy for the agricultural sector.

4.3: The Agricultural Policies:

The stages of the Indian Agriculture development policy can broadly be classified into the following phases:-

i) The first phase of the Indian agricultural development policy witnessed the tremendous agrarian reforms in the institutional arrangement, the development of major irrigation project and the strengthening of cooperative credit institution. An important contribution in this aspect is the land reforms and the abolition of intermediaries and giving land titles to the actual cultivators.

ii) The second phase in Indian agriculture started with the green revolution in mid 1960s. With the introduction of High-Yielding Varieties (HYV) of crops, multiple cropping, modern technique of farming and the improvement

in irrigation facilities along with research, extension, input supply, credit, marketing, price support and spread of technology, the policy makers gave prime concern.

iii) The third phase began in 1980s which witnessed the process of diversification and growth in non-food grains output.

iv) The fourth phase of agricultural policy started with the liberalization process in 1991. It involved in the deregulation of agrarian policy, reduced government participation in economic activities, which led to the launching of New Agricultural Policy (NAP) by the Indian Government in July 2000.

The NAP-2000 aims to attain a growth rate of 4% per annum base on efficient use of resources and conserve our natural resources and bio-diversities with equity, demand driven and which is technologically, environmentally, economically and globally sustainable. It is the government strategy to synergize agriculture growth through privatization and price protection to our agriculture farmers. The policy also envisage for a progressive institutionalization of rural and farm credit, insurance packages to the farmers right from sowing of crop to post-harvest operation including market conditions of the agricultural products.

4.4: Background of Agriculture Finance in India:

The Indian agriculture system is characterized by several problems relating to land ownership, size and location of holdings, low productivity arising due to inadequate irrigation facilities, low fertilizer consumption, lack of mechanization and even the problems of marketing the very few that is produce. Since, agricultural production has certain peculiarities; it creates problems arising out of lack of proper storage and transport facilities. Farmers required finance to solve his multiple problems. "It is a truism that the majority of the peasants cultivators in India find borrowing necessary as their own saving are inadequate for the finance of their various agricultural activities. Credit not only provides command over resources, but also facilitates the

liquidity needed by the peasant farmers" (Lipton; 1976)[83]. In India, the need of financial is provided by the institutional and non-institutional sources.

4.4.1: Non-Institutional Sources of Agriculture Finance:

Agriculture was in a deplorable condition with many of our farmers under heavy debt burden of the village money lenders. Our farmers have neither much knowledge nor money and in addition, their land holdings are small and scattered. They produce hardly enough to feed themselves for the year and agriculture was totally dependent on the uncertain monsoon rain. Since most of the Indian farmers are illiterate or not so much educated, they are afraid to go to bank for taking loans and look for financial assistance from the unorganized sector or the non-institutional level, which include the professional money lenders, traders, relatives, friends and landlord. This greedy lender charges capricious rates of interest usually at a very high rate. In addition to it, these private money lenders follow many corrupt practices like forcing the farmers to give their produce to him, grabbing farmer's land for nonpayment of loan dues in times and so on. Inspite of these malpractices most of the farmers prefer to take loan from them as it is easily accessible and requires few formalities to get the loan even for unproductive purposes.

4.4.2: Institutional Sources of Agriculture Finance:

Intervention of Banking Sector into the Indian Agriculture Sector primarily aimed at making bank credit a catalyst agent in the agricultural development, spreading the banking habit to the rural and semi-urban areas. Though the formal banking system in India[84] dates back to the 1786, it was only after the establishment of the Reserve Bank of India (RBI) in 1935 the government took bold initiatives in banking sector reform, the government started offering extensive banking facilities since 1955, especially in rural and semi-urban areas. It reinforced the process of institutional

[83]. Lipton, Michael (1976), "Agricultural Finance and Rural Credit in poor Countries". World Development, Vol.4, Issue 7, pp.543-553.

[84]. www.ftkmc.com : The General Bank of India was first set up in the history of formal sector banking by the Britishers in 1786.

development for agriculture credit (Shivamggi, HB 2000)[85]. The progress of institutional credit delivery to agriculture sector is broadly classified into four distinct phases:–

1. **1904-1969:** Predominance of co-operatives and setting up of RBI.

2. **1969-1975:** Nationalisation of Commercial Banks (CBs) and setting up of Regional Rural Banks (RRBs).

3. **1975-1990:** Setting up of National Bank for Agriculture and Rural Development (NABARD).

4. **1991 till then:** From 1991 onwards financial sector reforms

Ever since, the setting up of RBI in 1935, there has been a drastic increased in the number of banking branches. In India, the rural banking system has done a very wide network of rural financial institution by privileging the quantitative aspect that is providing as many rural outlets as possible at the expense of quality service delivery[86].

4.5: Extent of Credit Supply:

Over the recent years, there is an increasing trend in the total agricultural credit from the institutional sources. Soon after independence in 1950-51, the total institutional credit was 7.3% and it has increased to 66.3% in 1991[87]. Since the nationalization of Banks in 1969, the total bank credit stood at Rs.3467.40 crores to Rs.144702.00 crores in1993 which is nearly 41 times higher. During 1984-85, the total institutional credit amounts to Rs. 6230 cores to Rs.180480 crores in 2005-06 as indicated in table 4.2. The contribution of Cooperative Banks to the total agricultural credit was 55%, while Regional Rural Banks (RRBs) and Commercial Banks (CBs) with the contribution of 45% and 70% respectively in 2005-2006 (Economic survey 2006-07). The total flow of agriculture credit from different banking branches from the period from 1984-85 to 2011-12 is shown in the table given below.

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85. Shivamggi, H.B (2000)," Reforms in Rural Banking: Need for a bolder Approach". Economic and Political Weekly, Vol.35, No.20, May 13-19, pp.1714-1718.
86. ibid
87. India NSSO, Ministry of Statistics and PI, Government of India (2003): Situation Assessment Survey of Formers. 59the Round Sch. 33:2003

Table 4.2: Institutional Credit to Agriculture (Rs. Crores)

Year	Institutions						
	Co-operative Banks	Share	RRBs	Share	Commercial	Share	Total
1984-85	3440	55	--	--	2790	45	6230
1989-90	5082	52	--	--	4719	48	9801
1994-95	9406	50	1083	6	8255	44	18744
1999-00	18363	40	3172	7	24733	53	46268
2004-05	31424	25	12404	10	81481	65	125309
2009-10	63497	17	35217	9	285800	74	384514
2010-11	78121	17	44293	9	345877	74	468291
2011-12	87963	17	54450	11	368616	72	511029
2012-13	102592	--	57757	--	--	--	--
CGR	12.89%	-3.97%	14.7%	2.11%	18.34%	1.63%	16.41%

Source : Economic Survey 2010-11, NABARD Annual Report (Various Issues), Agricultural Statistic at a Glance 2012, RBI (ON595)
Note : Commercial Banks and RRBs were clubbed together up to 1990-91

The Co-Operative Banks are the major supplier of credit since 1974-75, and with the increased in the number of its branches across the country, continues to contribute major share in the total credit supply of the country. In 2008-09, the total credit flow to agriculture sector was Rs. 2, 87,149 crores as against the target of Rs. 2, 80,000 crores, achieving 102% of the target. In 2011-12, the target for credit flow was set at Rs. 4, 75,000, of which our achievement has been Rs. 5, 11,029 crores, which is 107% of the target. Similarly, target of credit flow for the year 2012-13 has been fixed at Rs.5, 75,000 crores and achievement at the end of September 2012 was Rs. 2, 39,629 crores[88]. The table 4.2 indicates the flow of institutional credit to agriculture sector from1984-85 to 2012-13. The Compound Growth Rate (CGR) of Co-operative Banks Credit to Agriculture sector during the last 28 years was 12.89%, while that of the RRBs is 14.7% and 18.34% growth rate by the CBs. The government of India has introduced several credit packages to agriculture farmer according to the types and time of credit

[88]. *State of Indian Agriculture (2012-2013*), Department of Agriculture and Cooperation, Directorate of Economics and Statistics Government of India Ministry of Agriculture, New Delhi

needs. Important packages such as the farm credit packages announced in 2004, interest subvention scheme of 2006-07, which encourages all banks to provide short term credit to agriculture (crop loan) up to Rs. 3 lakhs at 7% rate of interest. It has also recommended to incentivise prompt repayment in the Union Budget for 2009-10 to those farmers who repay their short-term crop loans on or before due date. In order to check the distress sale, Extension of Interest Subvention Scheme to Post Harvest Loans was introduced. Also, to address the situations arising out of natural calamities, relief measures such as Interest Subvention of loan was restructured in the Drought Affected States in 2012; revised packages for SHG- bank linkage, Joint Liability Group, short-term credit requirement through KCC and enhancement of collateral loans etc. are introduced.

4.5.1: Direct Institutional Credit to Agriculture:

Table 4.3 and table 4.4 reflect on the short term and long term direct credit for Agriculture and Allied Activities. Over a few span of time both direct and indirect financial assistance are extended to agriculture sector. The direct loans issued had increased from Rs. 37.31 crores in 1984-85 to Rs. 717.48 crores in 2004-05 as shown in table 4.3. The CGR of direct institutional credit to Agriculture and Allied sector shows that from 1984-85 to 2012-13 the Co-operative Banks was 14.49%, while that of SCBs was 21.05% and RRBs with 24.26% respectively. However, in contrary to increase rate of direct credit flow, the total loan outstanding by each bank is also increasing at an alarming rate. The CGR of loan outstanding by Co-operative Bank is 10.33%, and for SCBs is 20.38% and 22.1% under RRBs. The highest increase in loans issued was the Scheduled Commercial Banks (SBCs) with Rs. 2178.97 crores, while, the lowest was in the case of the RRBs and Co- operatives banks. The total direct institutional loan issued during 1974-75 in country amounts to Rs.13.91 billion and shot up to Rs.106.28 billion in 1989-1990. Within a decade in 1999-2000, it has increased to a triple digit of Rs. 455.34 billion. In 2011-12, the Schedule Commercial Bank (SCBs) alone had issued loan amounting to Rs.3128.77 billion. The establishment of Agricultural Finance Corporation Ltd. (AFC) in 1968 had enhanced the direct financial assistance for schemes/project relating to agriculture and rural development.

Table 4.3: Direct Institutional Credit for Agriculture and Allied Activities (Short-Term Rs. in billion)

Year	Loans Issued				Loans Outstanding			
	Co-operatives	SCBs	RRBs	Total	Co-operatives	SCBs	RRBs	Total
1984-85	23.23	10.35	1.32	37.31	28.36	19.64	2.06	50.06
1989-90	39.74	18.98	3.36	64.99	49.48	40.05	5.75	95.27
1994-95	69.96	38.42	6.88	119.32	70.91	61.54	11.15	143.61
1999-00	172.55	95.05	22.85	290.45	162.41	126.1	28.08	316.59
2004-05	318.87	299.78	98.83	717.48	324.81	427.98	109.8	862.59
2009-10	569.46	1246.46	305.29	2121.21	357.17	1676.23	336.63	2370.03
2010-11	690.38	1460.63	385.6	2536.61	496.45	1932.62	406.63	2835.7
2011-12	818.29	2178.97	470.11	3467.37	445.17	2690.3	465.8	3601.27
2012-13	1025.92	--	577.57	--	--	3534.25	552.55	--
CGR	14.49%	21.05%	24.26%	17.57%	10.33%	20.38%	22.1%	16.5%

Sources : 1. Reserve Bank of India.
: 2. National Bank for Agriculture and Rural Development

The SCBs continue to play a dominant role in providing long-term direct credit to agriculture and allied activities. The total long term direct loan issued increased from Rs. 24.36 crores in 1984-85 to Rs. 335.55 crores in 2004-05 respectively, of which the SCBs contribute to more than 50% of the share.

The table 4.4 indicate the direct long- term institutional credit to Agriculture and Allied Activities from 1984-85 to 2012-13. The CGR of Cooperative Banks during the last 28 years from 1984-85 to 2012-13 is 8.4%, the SCBs with 15.58% and the RRBs with 13.44% respectively. Similarly, the CGR for the total loan outstanding under the Co-operative banks is 7.4%, 13.19% by the SCBs and 13.53% by the RRBs.

Table 4.4: Direct Institutional Credit for Agriculture and Allied Activities (Long-Term- Rs. in billion)

Year	Loans Issued				Loans Outstanding			
	Co-operatives	SCBs	RRBs	Total	Co-operatives	SCBs	RRBs	Total
1984-85	8.31	14.26	1.78	24.36	35.31	46.49	4.9	86.7
1989-90	14.33	23.85	3.12	41.29	56.18	112.79	12.63	181.6
1994-95	28.79	35.66	3.95	68.41	97.18	147.66	18.94	263.78
1999-00	84.23	68.45	7	159.68	257.09	208.32	31.83	497.24
2004-05	131.22	183.89	20.43	335.55	463.41	527.21	57.3	1047.91
2009-10	65.51	636.07	41.11	742.69	240.74	1478.13	126.19	1845.06
2010-11	90.83	767.29	54.05	912.17	270.29	1643.22	144.04	2057.55
2011-12	61.34	949.8	60.48	1071.62	280.28	1742.68	172.44	2195.4
2012-13	86.11	--	68.92	--	--	1690.53	194.06	--
CGR	8.4%	15.58%	13.44%	13.94%	7.4%	13.19%	13.53%	11.79%

Sources : 1. Reserve Bank of India.
: 2. National Bank for Agriculture and Rural Development

4.5.2: Indirect Institutional Credit to Agriculture:

The indirect finances to agriculture are provided through the manufacturing and distributing agency of agricultural tools and other implements. The total indirect loan issued during 1975-76 amounts to Rs. 6.33 billions, it has increased to a triple digit of Rs.111.01 in 1991-94. Table 4.5 display the data on indirect agriculture credit and allied activities. It shows that the indirect finances to agriculture increased from Rs. 26.18 crores in 1989-90 to Rs. 1433.01crore in 2004-05. The highest indirect loans issued were in the case of Schedule Commercial Banks; however, the impediment is the accumulating growth rate of loan outstanding from all the banking branches. Out of the total Rs. 1433.01 crores of loans issued in 2004-05, the loan outstanding rose to Rs.1672.65 crores during the same period.

Table 4.5: Indirect Institutional Credit for Agriculture and Allied Activities

(Rs. in billion)

Year	Loans Issued					Loans Outstanding				
	Co- op	SCBs	RRB	REC	Total	Co- op	SCBs	RRBs	REC	Total
1984-85	29.93	--	0.08	3.27	--	21.95	14.59	0.3	16.75	53.59
1989-90	16.88	2.07	0.1	7.13	26.18	22.3	14.29	0.48	39.59	76.66
1994-95	123.37	5.83	0	9.67	138.87	165.17	28.66	0.33	61.92	256.07
1999-00	821.86	34.31	0.07	30.51	886.75	673.61	129.68	0.29	121.89	925.47
2004-05	1141.32	217.28	--	74.41	1433.01	1101.32	360.71	--	210.62	1672.65
2009-10	--	828.39	--	211.32	--	--	1455.54	--	659.79	--
2010-11	--	867.32	--	245.19	--	--	1469.23	--	817.25	--
2011-12	--	694.44	--	278.21	--	--	1425.85	--	1014.26	--
2012-13	--	--	--	392.75	--	--	1111.02	--	1273.56	--

Sources : 1. Reserve Bank of India in case of SCBs.
: 2. National Bank for Agriculture and Rural Development in case of RRBs and co-operatives.
: 3. Rural electrification Corporation Ltd. in case of REC.

Notes : 1. Data up to 1990-91 pertain to the period July-June and April-March thereafter. In case of SCBs, data for all the years pertain to July-June period.
: 2. RRBs came into existence in 1975-76.
: 3.Since 1999-2000, the data are strictly not comparable with the earlier years as it covers not only PACS but also SCARDBs and PCARDBs, while the earlier period covers PACs only.
: 4.Data for loans from co-operatives since 1993-94 are not strictly comparable with the earlier period as many defaulters became non-defaulters with the implementation of Agricultural and Rural Debt Relief ARDR Scheme resulting in an increase in the assistance from banks introduction stabilization of Lead Bank Returns LBR increase in the number of banks as also increase in the awareness and consequent improvement in the data maintenance and reporting system at the field level, resulting in an increase in the amount of loans reported in subsequent years..
: 5. In respect of loans issued by SCBs, the data from 1991-92 to 2006-07 are disbursements to priority sectors as at end-June.
: 6. In respect of outstanding loans by SCBs, data from 1991-92 onwards relates to priority sector advances as at end-March.

4.6: Regional Imbalances:

The most striking features of the India agricultural credit scenario is the wide regional disparities in the disbursement of agricultural credit (Mohan, Rakesh; 2004)[89]. It assumes topical significance to redress the fundamental structural problems of crop-regional imbalance growth. At one extreme end, some region witnessed sharp growth rate, whereas on the other side, some region have shown rigid inability to show any

[89]. Mohan, Rakesh (2004), "Agricultural Credit in India; Status, Issues and Future Agenda". *Indian Journal of Agricultural Marketing.* Vol.18, No.1, January-April 2004.

comparable sign of development. Unlike the rest of India, the contribution of agriculture credit agencies in the North Eastern Region (NER) is not only less, but discouraging. The loan provided by the co-operative institutions in particular is meager and insignificant. The ratio of credit supply to the Southern Region increased in the latter part of the 1990s, it remained stationery for the Northern, Central and North-Eastern Regions. It is also notable that the Southern States have a much more active cooperative movement and hence their share of agricultural credit is expected to increase. The East and North-Eastern regions clearly get a very low share.

Data shows that during 1973-74 and 1982-83, the total credit increases at the rate of 17% and 8% respectively. Among other States of India, the high growth rate of credit is prevalent in the State of Assam, Haryana, Rajasthan, Orissa, West Bengal and Kerala at 18-30%, since late 1980s. During 2003-04, the flow of agriculture credit has consistently exceeded the target and increased from Rs. 86, 981 crores to Rs. 2, 87,149 crores in 2008-09. In 1985-86, out of the seventeen states, only six states Haryana, Punjab, Gujarat, Karnataka, Kerala and Tamil Nadu had the per hectare flow of term credit from Scheduled Commercial Banks (SCBs) above the national average of Rs. 243.62. The States of Jammu and Kashmir, Assam and Orissa had the term credit flow below Rs.100 per hectare. The lowest per hectare term credit flow was in Assam Rs. 0.94 and the highest was in Punjab at Rs. 616.63[90].

The interesting revelation regarding inter-state disparities in the distribution of agricultural loan is attributed by the financing agency. The State Bank of India (SBI) and its subsidiaries have reduced the agriculture sector's share in their total bank credit outstanding in a steep manner from 25.6% in 1984 to 19.9% in 1987 and thereafter steadily to 11 to 12% in recent years. It was after the 1990s, all banks had readjusted their sectoral credit portfolios to suit the emerging liberal economic policy scenario. The CBs and the RRBs are the major players in the field of financial assistance to the farmers, the total loan advances and outstanding loan to agricultural farmers is reflected in the table 4.7 below.

[90]. Sukla, A.N, Tewari SK, Dubey, P.P (2012), "An analysis of status and trend of investment credit in Indian Agriculture". *J Agri Sci*,3(1): Pp 29-33

Table 4.6: Distribution of Agricultural Credit Across the Indian State

Region/ State	1990- 2001	2001-02	Annual increased in %	Annual % GCA 1998-99	Rs. hectare of GCA		Annual increased in %
	crores	crores			1990-91	2001-02	
Northern	1314 (12.9)	8236 (19.9)	43.9	20.25	377	2132	38.9
Punjab	642 (6.3)	4304 (10.4)	47.5	4.22	856	5352	43.8
Haryana	285 (2.8)	1821 (4.4)	44.9	3.22	482	2964	42.9
Rajasthan	326 (3.2)	1490 (3.6)	29.7	11.7	168	667	24.7
Himachal Pradesh	20 (0.2)	248 (0.6)	93.2	0.51	207	2555	94.5
Jammu and Kashmir	20 (0.2)	83 (0.2)	25.5	0.57	191	764	25
North-Eastern	41 (0.4)	207 (0.5)	34	2.9	96	374	31.4
Assam	20 (0.2)	124 (0.3)	42.4	2.09	54	311	39.9
Eastern	846 (8.3)	3062 (7.4)	21.8	14.71	463	1092	22.8
Orissa	306 (3.0)	414 (1.0)	3	4.53	319	479	4.2
West Bengal	285 (2.8)	1573 (3.8)	37.6	4.83	329	1708	34.9
Bihar (includes Jharkhand)	245 (2.4)	1076 (2.6)	28.3	5.25	233	1075	30.1
Central	1722 (16.9)	5835 (14.1)	19.9	27.57	349	1110	18.2
Madhya Pradesh (includes Chhattisgarh)	746 (7.5)	1821 (4.4)	11.5	13.67	320	698	9.9
Uttar Pradesh (includes Uttaranchal)	958(9.4)	4056(9.8)	27	13.9	376	1529	25.6
Western	138 (13.6)	5959 (14.4)	27.5	7.06	430	1831	27.4
Gujarat	520 (5.1)	2980 (7.2)	39.5	5.56	501	2809	38.3
Maharashtra	846 (8.3)	2938 (7.1)	20.6	11.4	387	1352	20.8
Southern	4880 (47.9)	18127 (43.8)	22.6	17.51	1410	5426	23.8
Andhra Pradesh	1477 (14.5)	5587 (13.5)	23.2	6.36	1120	4604	25.9
Karnataka	642 (6.3)	4041 (9.7)	43.8	6.13	546	3432	44.1
Kerala	835 (8.2)	2276(5.5)	14.4	1.56	2766	7666	14.8

Source : Report of the Advisory Committee on Flow of Credit to Agriculture and Related Activities from the Banking System, RBI, Mumbai, 2000

Note : GCA refers to Gross Cropped Area

In 2014, Andhra Pradesh has 5116526 no. of a/c with Rs. 24217.38 crores of loan/advances outstanding to agricultural farmers in respect of Co-operative and RRBs[91]. In 1990-2001, the total agriculture credit disbursed in the Northern Region was Rs.1314 crores, which is 12.9% of the total disbursement in the country. The NER with Rs. 41 crores which is 0.4%, the Central Region with Rs.1722, Southern Region with Rs. 4880, which are 16.9% and 47.9% respectively. The share of Southern Region continues to dominate in 2001-02, with 43.8%, while the NER hang around at 0.5%.

Rupees per hectare Gross Cropped Area remained invariably high in the Southern Region with Rs. 5,426 crores and Rs.1,110 crores in the Central Region, while the North Eastern Region with only Rs. 374 crores and Rs. 2124 crores in the Northern Region of the country in 2001-02. Besides, there is wide variation in the availability of institutional credit per hectare of Gross Cropped Area in different state. Lack of institutional credit delay the adoption of modern technology and private capital investment, which in turn lowers the productive capacity of agriculture sector and results in low productivity and production, pushing the farmers to borrow from non-institutional sources. The long-run consequence is the demand for agriculture credit purpose dampened.

During 2002, there are more than 98250 Primary Agricultural Credit Societies (PACs) in India with the loan outstanding of Rs. 34,520 crores[92]. In 2012, there are 92432 Primary Agriculture Credit Societies (PACS) in India with a total working capital of Rs. 1605079.58 million, of which there are 3500 PACS in the North Eastern Region with the working capital of Rs. 3, 958 million. Whereas, in Nagaland there are 1719 PACS with Rs. 1, 125 million only in the same time period[93].

[91]. Lok Sabha unstarred Question No. 351, dated the 11/7/2014)

[92]. India NSSO, Ministry of Statistics and PI, Government of India (2003): Situation Assessment Survey of Formers. 59the Round Sch. 33: 200

[93] . http://www.indiastat.com/agriculture/2/stat.aspx

Table.4.7: State-wise Loan/Advances Outstanding to Agricultural Farmers in Respect of Co- operative and Regional Rural Banks (RRBs) in India

(As on March, 2014)										
States/UTs	Year	Cooperative Banks		Average Loan Outstanding (Rs. in '000)	Regional Rural Banks		Average Loan Out-Standing (Rs.' 000)	Total		Average Loan Outstanding (Rs..
		No. of A/C	Amount (Rs. Crores)		No. of A/C	Amount (Rs. Crores)		No. of A/C	Amount (Rs. Crores)	
Nagaland	Mar-12	7802	19.42	24.89	420	2.71	64.52	8222	22.13	26.92
India		19601 676	92457. 49	47.17	14591 623	70384 .89	48.24	34193 299	16284 2.38	47.62
Nagaland	Mar-13	323	3.22	99.69	--	--	--	323	3.22	99.69
India		34155 276	11992 2.89	35.11	14344 831	79499 .54	55.42	48500 107	19942 2.43	41.12
Nagaland	Mar-14	--	--	--	1334	4.32	32.38	1334	4.32	32.38
India		30950 714	13524 4.4	43.7	16161 035	98206 .73	60.77	47111 749	23345 1	49.55

Source : http://www.indiastat.com/

KCCs are introduced to help the needy farmers; it is a card to provide affordable credit for farmers in India. It was started by the government of India, RBI and NABARD in 1998-199 to help the farmer access timely and affordable credit. It progresses very rapidly across the states of the country. The agency wise distributions of KCCs over the years are tabulated below in table 4.8. In 2009-10, against the target of Rs. 3, 25,000 crores, it has sanctioned an amount of Rs. 384514.2 crores for KCCs[94].

[94]. Lok Sabha starred question No.284 & 334, dated the 13/8/2010 & 27/4/2012

Table 4.8: Agency-wise Kissan Credit Card Issued and Amount Sanctioned in India

(2003-2004 to 2011-2012-upto 31.10.2011)								
	Cards Issued (Lakhs)				Amount Sanctioned (Rs. in Crores)			
Agency	Co-operative Banks	Regional Rural Banks	Commercial Banks	Total	Co-operative Banks	Regional Rural Banks	Commercial Banks	Total #
2003-04	242.58	39	132.21	413.79	9855	2599	9331	21785
2004-05**	2.78	0.56	1.76	5.1	15597	3833	14756	34186
2005-06** $	0.28	0.11	0.31	0.7	20339	8483	18779	47601
2006-07	22.97	14.06	48.08	85.11	13141	7373	26215	46729
2007-08	20.91	17.73	46.06	84.7	19991	8783	59530	88262
2008-09	13.44	14.15	58.34	85.93	8428	5648	39009	53085
2009-10	17.43	19.49	53.13	90.05	7606	10132	39940	57678
2010-11	28.12	17.74	55.83	101.69	10719	11468	50438	72625
2011-12	17.58	10.57	11.79*	39.94	7461	6568	12652*	527052
March 2013	26.9	20.48	82.43	129.82	--	--	--	--

Source : Ministry of Agriculture, Ministry of Finance, Govt. of India and Ministry of Statistics and Programme implementation, Govt. of India (14446)

Note ** Figure in crores,
$ As on 31.12.2005,
# Since inception of the scheme in 1998

In March 2013, the Co-operative Banks alone had issued 2690.547 thousand KCCs of which North Eastern Region constituted 17.141 thousand KCCs with Rs. 0.187 thousand crores in Nagaland. The Northern Region comprises of 1,585.9 thousand KCCs amounting to Rs. 299.4 billion, the NER with 325.3 thousand KCCs amounting to Rs. 13.5 billion.

Table 4.9: Kissan Credit Card Scheme, State-wise Progress (March-end 2013)

(Amount in Rs. billion and Number of cards issued in '000)									
State/UT	**Year**	**Co-operative Banks**		**Regional Rural Banks**		**Commercial Banks**		**Total**	
Nagaland #	Mar-13	0.187	0.0014	0.039	0.0009	8.438	0.364700848	8.664	0.3670
North-Eastern Region		17.141	1.1411	116.35	3.3772	191.788	8.939312337	325.279	13.458
All India		2690.55	119.209	2048.17	132.637	8243.38	1010.91032	12982.1	1262.76

Source : http://www.indiastat.com

The Western Region with 1498.9 KCCs amounting to Rs.178.0 billion, the Central Region comprising of 3139.6 KCCs with Rs.275.1 billion and the Southern And Eastern Region comprising of 4278.2 and 2154.1 KCCs amounting to Rs. 389.5 and Rs. 107.3 billion respectively at the end of March 2013. Agricultural finances are also provided through Taccavi loan which are better known through the Land Improvement Act of 1883 and Agriculturists Loan Act of 1884, generally for long term loans and short-term loan respectively. Taccavi loans are usually advanced for emergencies either flood or famine etc. The rates of interest are low and accessible.

Over the years, Special Agricultural Credit Plan (SACP) disbursement can be seen in table 4.10. The fund disbursed under SACP for Southern Zone (comprising of Karnataka, Andhra Pradesh, Tamil Nadu, Kerala, Puducherry and Lakshadweep) amounts to Rs. 80641.95 in 2009-10 to Rs. 119599.60crore in 2011-12. The Central Zone and the Western Zone comprises of Rs. 40180.40 crores and Rs. 27152.61 crores respectively (2011-12). For the North Eastern Zone, the amount of disbursement under SACP was Rs. 1298.94 crores in 2009-10 to Rs. 2188.6 crores in 2011-12. While for the State of Nagaland, it was Rs. 36.51 crores in 2009-10 to Rs. 196.18 crores in 2011-12.

Table 4.10: Disbursement of Funds for Agriculture under Special Agricultural Credit Plan (SACP) in India

2009-2010 to 2011-2012 (Rs. in Crores)			
States/UTs	**2009-10**	**2010-11**	**2011-12**
Nagaland	36.51	53.13	196.18
North East Zone	1298.94	1724.49	2188.6
India	207347.33	251398.33	274053.86

Source : http://www.indiastat.com

The Ground Level Credit (GLC) disbursement under Agriculture and Allied Activities is indicated in table 4.11. Out of the Rs. 29,994 lakhs for the North Eastern Region, Nagaland has its share of Rs.742 lakhs in 2003-04 and it has increased to Rs. 2,402 lakhs in 2005-06.

Table 4.11: State-wise Ground Level Credit (GLC) Disbursement under Agriculture and Allied Activities in India; 2003-2004 to 2013-2014 (Rs. in Lakhs)

States/UTs	Nagaland	North Eastern Region	Northern Region	Eastern Region	Southern Region
2003-04	742	29994	2181869	504740	2613740
2004-05	1978	40733	3212464	723769	3681854
2005-06	2402	93571	5044838	1221627	6346336
2006-07#	46	825	63458	15393	80028
2007-08#	41	959	68278	17822	95835
2008-09#	13	1515	84343	22398	112343
2009-10#	42	1637	105325	28273	144479
2010-11#	60	4620	115637	38261	184047
2011-12#	22	537	39408	14687	38320

Source : http://www.indiastat.com/
Note : # incomplete data

Table 4.11 indicates that, the GLC disbursement under Agriculture and Allied Activities in the Northern Region was Rs. 21, 81,869 lakhs in 2003-04 to Rs .50, 44,838 lakhs in 2005-06. The Eastern Region comprising of four States has Rs. 5, 04,740 lakhs during 2003-04 and Rs. 2, 21,627 lakhs in 2005-06. Nagaland had Rs. 742

lakhs in 2003-04 and Rs. 2402 lakhs in 2005-06 respectively for GLC. The Central Region with Rs. 2, 31,336 lakhs in 2004-05, while the Western Region had Rs. 26,17,793 lakhs and the Southern Region with Rs. 63,46,336 lakhs in 2005-06.

The North Eastern State wise distribution of GLC under Agriculture and Allied Activities during 2001-02 was highest in Assam with Rs. 73.18 crores, Rs. 17.39 crores in Tripura and Rs. 5.40 crores in Nagaland. The CGR for the NER is also in calculated from 2001-02 to 2009-10. The table shows that Arunachal Pradesh, Mizoram and Sikkim had a negative growth rate of -16.37%, -12.65% and -9.4% respectively. Assam and Tripura indicate a steady growth rate of 12.32% and 19.45% respectively. The CGR of Meghalaya and Nagaland is 1.46% from 2001-2002 to 2009-10.

Table 4.12: State-Wise GLC Disbursement under Agriculture and Allied Activities during 2001-02 to 2009-10 for the Northeastern States (Rs.in crores)

Year	Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Tripura	Sikkim	North Eastern States
2001-02	5.39	73.18	1.42	6.42	3.57	5.4	17.39	3.68	116.45
2002-03	9.84	101.27	4.05	5.52	6.84	5.4	17.59	3.25	153.76
2003-04	3.9	191.29	5.8	51.84	5.44	7.42	30	4.25	299.94
2004-05	12.57	267.24	19.23	24.74	20.19	19.78	38.17	5.41	407.33
2005-06	13.37	663.32	57.66	56.57	24.32	24.02	84.76	11.69	935.71
2006-07	23.28	541.81	30.34	45.01	32.82	46.11	93.5	13.05	825.92
2007-08	21.44	652.72	48.32	40.75	43.55	41.01	96.54	13.65	957.98
2008-09	29.66	1008	35.84	96.88	37.7	13.18	279.13	13.7	1514.07
2009-10	1.25	185.32	--	7.21	1.21	4.8	72.06	1.67	273.52
CGR	-16.37%	12.32%	49.71%	1.46%	-12.65%	1.46%	19.45%	-9.4%	11.26%

Source : http://www.indiastat.com

These wide regional imbalances in credit supply in the North Eastern Region need to be mitigated in time, which would call for a radically different innovative approach of lending as these regions are endowed with diversity of natural resources, skewed distribution of land holdings different from the rest of the country. The process

of production is beyond control confining agriculture operation to few months in year. Therefore, unless sophisticated inputs and other supporting services, outlets for marketable surplus are adequately supplied and the secondary and tertiary sectors based on agriculture are developed, commercialization of agriculture would be a distance dream. The forward and backward linkages –the basic infrastructural development and the supporting services should be in hand together.

4.7: Institutional Sources of Agriculture Finance in Nagaland:

With the change of time agriculture has become highly capital-intensive due to requirement of sophisticated inputs and machinery (tractors, fertilizer, and pesticide and high quality seeds). These have enhanced the demand for agricultural credit in manifold in the State. The farmers are looking for a better avenue to improve their production not only for self-consumption, but to the needs of the growing market demand. Loans and credit are the answer to cater to the urgency of these needs.

NABARD as an apex institution for agriculture and rural development, channelize down financial assistance to the people, through all the banks and financial institutions such as the Co-Operative Banks (SCBs), the Regional Rural Banks (RRBs), the LDBs and other financial institutes approved by the RBI. During 2013, there are 146 banks in Nagaland with the maximum number of banking branches in Dimapur District totalling to 47 banks, followed by Kohima District with 32 banks, Mokokchung District with 19 banks, Wokha District with 11 banks, Phek District with 8 banks, Zunheboto District with 7 banks, Mon District with 6 banks, Peren District with 4 banks, Kiphire District with 3 banks and only1 bank for Longleng District. The analysis of priority sector advances for Agriculture sector in Nagaland is shown in table 4.13.

During the 1st quarter of the financial year (FY) 2013-14, the total number of a/c was 28167 under all SCBs, with the total outstanding of Rs. 16555.85 lakhs. The total demand raise was Rs. 3353.17 lakhs with a recovery of only Rs. 853.84 lakhs, which is 25% of the total lend-out during the same quarter period. The total number of a/c during the FY 2013-14 rose to 66218 at the NPA amount of Rs. 5436.17 lakhs. The year 2012-13, witnessed highest number of operating a/c 101113 along with the maximum amount of demand raise to Rs. 12259.38 at the Gross NPA of Rs.12836.94 lakhs respectively.

Table 4.13: Analysis of Priority Sector Advances under Agriculture of Nagaland

(Rs. in lakhs)

Year wise	No. of A/C	Total O/S	Demand Raised	Recovery Amount	Over dues Amount	Gross NPA Amount	New Loans
2010-11	32095	16985.23	3734.38	1108.22	2626.16	2766.25	13898
2011-12	33608	40761.53	4246.44	1390.71	2855.73	2906.66	5349.86
2012-13	101113	104300.87	12259.38	3601.73	8657.65	12836.94	10475.36
2013-14	66218	62024.37	8250.63	2262.6	5988.03	5436.17	7953.07

Source : http:// www.onlineslbcne.nic.in/AgricultureAdvancesManager.php
Note : 2009-10: Data not available
: 2010-11: Data as on 31st December
: 2011-12: Data as on 31st March

Similarly, the analysis on priority sector advances under crop loan in Nagaland is shown in table 4.14. In 2010-11, the number of a/c for crop loan was 22663 and increased to 72753 in 2012-13, indicating the operation of large numbers of small accounts. The total dues over the year 2010-2014 amounts to Rs. 8303.02 lakhs and the total amount recovered during the same period under crop loan is only Rs. 3473.02 lakhs. The total number of a/c in operation, during the four (4) Financial Years; from 2010-2014 was 144056 as per record provided up-to September 2007 of the financial year 2007-08. The total amount disbursed for crop loan in the state is Rs. 3302.35 lakhs with the total account of 16159. There was a declined in the flow of crop loan; in September 2008 the total amount disbursed was only Rs. 601.49 lakhs with 654 accounts. During 2008-09, the disbursement increases to Rs. 1281.44 lakhs with 2231 account, but the adverse thing is that the total outstanding amount also increases to Rs.778.22 lakhs at the same. There was a huge leap in the crop loan disbursement by mid-2011 amounting to Rs. 1008.91 with 2354 number of account out of which 2098 accounts are KCC holders.

Table 4.14: Analysis of Priority Sector Advances under Crop Loan of Nagaland
(Rs. In Lakhs)

Bank Name	No. of A/C	Total O/S	Demand Raised	Recovery Amount	Over dues Amount	Gross NPA Amount	New Loans
2010-11	22663	10300.46	1106.92	276.79	830.13	1111.77	4532.96
2011-12	25592	11057.72	1319.97	301.64	1018.33	1248.22	4191.43
2012-13	72753	29253	7093	2058.84	5034.16	4980.49	5641.63
2013-14	23048	10613.35	2257.08	835.75	1421.33	1643.97	2663.31

Source : http:// www.onlineslbcne.nic.in/CropLoanAdvances.php
Note : 2010-11: Data as on 31st December
: 2011-12: Data as on 31st March

During 2007-08 the total no. of KCC issued was 1439 against the target of 7691, which consisted of only 18.71%. In 2008-09, Nagaland could only achieved 17.51% of the total target laid at 7830. The year 2011-12 seems to be a better performing year with 2111 card issued within the first 3 months of the year (SLBC, Nagaland). The year wise detail on KCC is established in table 4.15 below.

Table: 4.15: Financing Under Kissan Credit Card (KCC) in Nagaland (Rs in Lakhs)

Year wise	Target	Current Year Number of Cards issued	Current Year Limit Sanctioned	Cumulative Position Number of Cards issued	Cumulative Position Limit Sanctioned
2010-11	43800	11932	5822.12	25726	8761.87
2011-12	22000	12188	4250.02	25867	9040.88
2012-13	93050	11807	4651.71	77202	27157.92
2013-14	24855	3290	1250.79	49543	53191.69

Source : www.slbc.in/nagalandslbc/hmtl
Note : 2010-11: Data for 1st & 3rd quarter
: 2011-12: Data for 2nd and 4th quarter

The number of Kissan Credit Card (KCC) issued by the Nagaland during 2010-11 was 11932; it has decreased to 3290 in 2013-14. The total number of KCCs issued in position in 2013-14 is 49543 with the cumulative limit sanctioned of 53191.69. It indicates that, a good number of our farmers are also coming forward to borrow, taking

advantage of the KCC. The current rate of interest under KCC is 7% per annum repayable after the post-harvest.

The detail breakup on the direct and indirect loan given for agriculture purpose in Nagaland during 2010-11 to 2013-14 is reflected in table 4.16. The table indicates that the number of agriculture term loan was 9,592 amounting to Rs 6860.84 lakhs during 2010-11 and it has increased to 11789 in number with Rs.12778.69 lakhs in 2013-14. Similarly, the number of crop loan is also on a rise from 43085 amounting to Rs.28172.39 lakhs in 2010-11 to 22435 in number to Rs 9859.35 lakhs respectively. The total number of direct agriculture loan was 52677, amounting to Rs 35033.23 lakhs to 34224 in number with Rs. 2238.04 lakhs in 2013-14.

Table 4.16: Detail of Direct and Indirect Agriculture Loans in Nagaland (Rs. in Lakhs)

Year	2010-11	2011-12	2012-13	2013-14
Agriculture Term Loan (Numbers)	9592	12347	32789	11789
Agriculture Term Loan Amount	6860.84	9768.18	730857.9	12778.69
Crop loan (Numbers)	43085	16124	67652	22435
Crop loan Amount	28172.39	8491.49	28670.72	9859.35
Total Direct Agriculture Loan (Numbers)	52677	28471	100441	34224
Total Direct Agriculture Loan Amount	35033.23	18259.67	759528.6	22638.04
Indirect Agriculture (Numbers)	--	51	183	152
Indirect Agriculture Amount	--	379.57	215876.2	967.57
Grand Total Agriculture (Numbers)	52677	28522	100624	34376
Grand Total Agriculture Amount	35033.23	18639.24	975404.8	23605.61

Source : http://www.onlineslbcne.nic.in/DirectAndIndirectAgricultureLoan.php
Note : 2010-11: Data for 1st and 3rd quarter
: 2011-12: Data for 3rd and 4th quarter

Nagaland State Co-operative Bank (NSCB) which was set up in 1966 has expanded its branches to 21 across the10 Districts (except Longleng) of Nagaland. There are 313 Co-Operative Societies dealing with Agri. and allied activities, of which there are 18 such societies in Kohima District and 48 in Phek District. In Kohima District, there is a VDB Co-operative Society and Agri. Farming Co-operative Society.

Therefore, besides the individual lending to needy farmers, the Co-operative Banks exercise its financial assistance to the needy through different channel.

In 2010-11, the number of Agriculture Term Loan was 9592 with the total amount of Rs. 6860.84 lakhs and increases to 11789 number of Agriculture Term Loan in 2013-14. The total amount for the Term Loan rose to Rs.12778.69 lakhs in 2013-14. Similarly, the number of Crop Loan was 43085 in number in 2010-11 and increased to 22435 in numbers 2013-14, amounting to Rs. 28172.39 lakhs in 2010-11 to Rs.9859.35 lakhs in 2013-14 respectively. Therefore, the total number of agriculture loan was 52677 amounting to Rs. 35033.23 lakhs in 2010-11. It has increased to 34376 with the total amount of Rs. 23605.61 lakhs in 2013-14. In 2012-13, the short term loan was issued to 149 Primary Agricultural Credit societies (PACs) amounting to the tune of Rs. 355, 76,200 during kharif season covering 6256 acres of land as indicated in table 4.17.

Table 4.17: Extension of Loans for Kharif and Rabi Crops (Amount Rs.)

FY	Types of loans	No. of PACS	Amount applied for	Amt. Recommended by BM/ ARCS	Season	No. of Member	Acres	Amount(Rs.)
2012-13	Short Term Loan Issued to PACS	149	53388900.00	44935476.00	Kharif	4412.00	6256.00	35576200.00
		25	6992500.00	5078000.00	Rabi	815.00	471.00	39315000.00
2013-14	Short Term Loans Issued to PACS	137	54415300.00	45718610.00	Kharif	3806.00	7389.00	39892200.00
		30	10059800	7199000	Rabi	1023.00	990.00	6728000.00

Source : Agriculture credit section, Nagaland State Co-Operative Bank (NSCB) 2013-14

Up to December 2013 of the financial year 2013-14, 137 PACs are financed amounting to Rs. 398, 92,200 for kharif alone. As indicated in the table 4.17 the number of PACs for rabbi season crop is comparatively lesser and the coverage of land in production too. It has also assisted agri. and allied sector such as piggery, poultry, dairying and banana cultivation amounting to Rs. 109.62 lakhs in 2012-13. Farmers' Joint Liability Group (JLG) was initiated in 2011-12 and the total of 374 such groups are assisted with loan of Rs. 97.85 lakhs in the same year. Up to November of the financial year 2013-14, 65 JLG are granted loans of Rs. 31.45. Besides, it has financed

443 Self Help Groups (SHGs). Loan advances for Church project was also initiated in 2012-13. Since 2012, 41 Farmers Club are financed amounting to Rs. 38.37 lakhs by NSCBs and issued 1203 KCCs.

4.8: Non-Banking Financial Intermediaries as a Source of Agriculture Finance:

Studies brought out by the Agricultural Credit Review Committee by the Reserve Bank of India, suggested for an effective credit planning system in term of forecasting credit demand and to provide resources at the same time, so that shortages and wastages do not arise. In order to materialize these needs, the mechanism of decentralization of credit planning at the District and Block level planning was laid with the lead bank playing the key role to this dimension[95].

Nagaland was the pioneer in this concept of decentralized planning through the Village Development Boards (VDBs). To augment the flow of Ground Level Agricultural (GLC) and rural credit, the pilot scheme was formulated in consultation with the Ministry of Rural Development (MoRD) and Ministry of Finance (Banking division), Government of India and the State Government of Nagaland, State Bank of India/United Bank of India/ NEDFI. It was during the 7th plan period, the idea of grass-root level planning and development became a reality in 1980 with the constitution of Village Development Board (VDBs). Since then, Nagaland with the unique constitutional provision in regard to the delivery of finances through the Village Development Board (VDBs) was initiated. This decentralized system of governance empowered the VDBs to play the role of both financial intermediaries and non-banking financial intermediaries in the state[96]. The Nagaland Village Council Act, 1978 which was first conceptualized by Shri. Gokhale DC, Phek (1976) at Ketsapo Village and later Lt.Vamuzo, Finance Minister of Nagaland empowers the Village Council to borrow money from the Government or banking Institutions for the development and welfare of the villager and to repay the same with or without interest as the case may be. The VDBs can enter into any loan agreement with the Government, Banks and Financial

[95]. Reserve Bank (1951-54), "Review of Agricultural Credit System in India". Agricultural Credit Review Committee

[96]. Dr. Karmakar, K.G, Dr G. D. Banerjee, "Village Development Boards (VDBs) in Nagaland". Head Office NABARD, Mumbai

Institutions (FIs) for the permanent residents of the village and to provide security for due repayment of the loan.

The Village Development Board (VDB) through the Village Development Model Rules of 1980 (Revised)[97], can lend money from its funds to the deserving permanent resident of the village and to obtain repayment thereof with interest or without interest. They can forfeit the security of the individual borrower on his default in repayment of loan/ advances to him. A bonafide person desiring to borrow from the Village Development fund can apply so, according to the rules and regulation provided by the council. The auditing of village account is assisted by the Deputy Commissioner (DC) of the District. In case of any discrepancy and dispute the interpretation given by the DC or Additional Deputy Commissioner (ADC) is final, subject to the approval of the government.

In 2011 out of 52 Rural Development blocks (RD), 21 administrative blocks are unbanked, hence in ordered to bridge the gap of financial discrepancy, the Village Development Boards are identified as a useful tool to implement the role of financial intermediaries or Non-Banking Financial Intermediaries to integrate as an important credit mechanism in the rural areas. During the early 2004-05, 25 VDBs are identified on a Pilot project with the state government, NABARD, and Central Government to the tune of 40:20:20:20 respectively[98]. The VDBs disbursed the same to the needy borrowers at a maximum interest rate of 18% per annum. The impact of the pilot scheme received encouraging feedback with 100% loan recovery. Further proposal was made to extend the corpus fund to existing VDBs. Till 2008-09, the proposed scheme covers 1096 VDBs. These 25 VDBs are selected across the state on the basis of active participation recommended through the Block Development Office level to the District and to the State. The list of these 25 VDBs are as tabulated in table 4.18.

[97] . Angami, Z (2008), "Nagaland Village Empowering Laws (A compilation)". *Government of Nagaland, Kohima*.

[98]. Rural Development, Nagaland: A manual of Rural Development Department Nagaland: Kohima

Table 4.18: List of 25 VDBs on Pilot Project as Non-Banking Financial Intermediaries

District	Block	Name of the VDBs	District	Block	Name of the VDBs
Phek	Kikruma	K. Basa	**Mon**	Phomching	Longwa
	Sekruzu	Rungozu Basa		Tobu	Tobu village
	Meluri	Aghegow/ kukegow		Wakching	Shiyong
Tuensang	Shamator	Rurur	**Dimapur**	Medziphema	Ruzaphema
	Thonoknyu	Wui		Kuhuboto	Xelhoshe
Kiphire	Sitimi	Monger New		Dhansiripar	Ruzaphe/Deziephe
Longleng	Longleng	Yachem	**Zunheboto**	Tokiye	Kukheshe
Kohima	Jakhama	Khuzama		Satakha	Shena old
	Tseminyu	Phensenyu		Suruhoto	Sapotimi
Peren	Peren	Old Peren	**Mokokchung**	Mankolemba	Longpayimsen
Wokha	Sanis	Mekokla		Ongpangkong	Chupayimkum
	Bhandhari	Koro		Ongpangkong (S)	Khensa
	Wozhuro/ Ralan	Shaki			

Source: State Institute of Rural Development (SIRD), Kohima: Nagaland

Under this scheme if an individual in the village want to obtain loans, expresses his desire in the monthly VDB meeting, and submit his application for the same. The management committee after scrutinizing through the information furnishes by the desiring candidate and satisfied by the person to abide by the rule and duration on repayment condition, the purpose of the loan etc. grants the loan. This program has encouraged in taking up community project like piggery, poultry, fishery which became a source of investment in the rural villages. Besides, the VDBs can take up developmental activities of the village through state sponsored program such as the Grant In-Aids (GIA) covering 1174 VDBs with 227917 tax paying households. The VDBs take up developmental activities such as construction of resting sheds, community latrine, drainage, footpaths, public wells and other approach roads in the villages.

Besides, the Department of Rural Development has been implementing 8 (eight) such major programs through the VDBs, namely; Indira Awaas Yojana (IAY), Grant-in –aid to VDBs (GIA), Matching Cash Grant (MCG), Swaranjayanti Gram Swaorzgar

Yojana (SGSY), National Rural Employment Guarantee Scheme (NREGS), Backward Region Grand Fund (BRGF) and Promotion of Micro Financing (PMF). Under all these programs, every recognized village is provided funds to the VDBs by the Department on the basis of number of households. The VDBs on the basis of priority requirements, select the scheme on which are then submitted to the Block Development Officers (BDOs), through the District Planning and Development Board (DP&DB), through District Rural Development Agency (DRDA) to the VDBs chairman for screening and approval by the DP & DB. The DP & DB on scrutiny approves /rejects schemes. Approved schemes are intimated to the DRDA/Blocks and the BDOs issues work order to start to VDB and on completion of work, physical verification & issue completion certificate for fund release to the concern VDBs by CEO- DRDA & Chairman VDBs.

4.9: Non-Institutional Sources of Agriculture Finances

Traditionally, a rich Naga farmer cultivates, what is needed for self-consumption, and saves part of his produce (usually the best quality seeds) for sowing the next season. These seeds are preserved and store by every household especially women. The farmers consider the following important factors such as the site selection, the type of soil suitability, and the climatic condition for each variety of crops to grow. There is no written record on financing of agriculture practice, sources available through oral tradition tell of how farmers exchange his day labor for another man day labor/ service. This is still a common practice in many parts of the rural areas. The practice of money lending, borrowing and the existence of money lender and professional-money lender for agriculture are not found among the Angamis of Kohima District and Chakhesang of Phek District in the survey. Each farmer manages his agriculture cultivation at his own capacity, to sustain/ feed him and his family throughout the year.

Barter system exist before currency was introduced, people exchange rice for meat, tools or baskets etc. There is no surplus or very little surplus for market, therefore, in an unfavorable season, if a poor farmer has no seeds left for sowing, he exchange his /her day labor/service for seeds from a richer farmer. A day's labor is exchange for *1*

lharha[99] of paddy which if grind is equivalent to 3 Kg of grains. "I earned Rs. 2/- a day during 1940s", said the Kohima village headman. A farmer's day labor/service is mostly rendered in exchanged of another farmer's day labor/service or in exchanged for goods. A male will exchange his day labor/service for another male or the service of two females. Exchange of male farmer service for female service rarely exist unless due to genuine reasons. Exchange of day's labor/service is very widely practice up to this day because all kind of agricultural activities are bounded to specific season. Therefore, a big family is always considered a blessing for a farmer.

A person in need can borrow at any time of the year, but has to repay, when the new paddy is harvested with 50% interest per year. Before the monetary system was introduced, mortgage of land, house and paddy fields was practiced and if a debtor fails to pay at a stipulated time, the creditor takes the pawned property as per the agreement. In case of any disputes, the village council settled the matters using the customary law. If a person does not follow the customary laws she/he is excommunicated completely from the village. The Village Council consists of only a few elders mostly illiterate, the people respect and abide by the rules and laws given by them. With the change of time and modernization, it is a curiosity to anyone if the customary law still holds the same strength as it was once.

Wage earning in the form of cash is very recent. The daily wage rate differs from village to villages. In Phek village and Ketsapo village of Phek District, the Village Council had fixed the day's wage at the rate of Rs. 250/- for both male and female. However, during the peak season (paddy transplantation season), wage rate rise up to Rs.350 to Rs.400. "Though village authority had fixed equal wage rate for both male and female, in reality there is always a difference of at least up to Rs.50 more for male than female", said the VDB Secretary, Phek village. This difference is also observed in Kohima District, though there is no fixed rate given by the Village Council.

4.10: Methods and Types of Agriculture Cultivation in the Study Villages

Rice cultivation is a common practice for every household in the study villages. Rice is either cultivated in jhum fields or on terrace field popularly known as Terrace

[99]. Small basket weaved from bamboo used for quantifying the person's day wage.

Rice Cultivation (TRC).Terrace Rice Cultivation (TRC) is classified into two different categories basing on the methods and types of cultivation people practiced. They are:-

i. **Wet Terrace Rice Cultivation:** Wet Terrace Rice Cultivation(WTRC) are usually practice along the river bank and valleys, where the terrace fields are irrigated from the river and spring water within the field or running water from a nearby stream throughout the year. The advantage of Wet Terrace Rice Cultivation (WTRC) is easy and manageable and has greater productivity than the dry terrace.

ii. **Dry Terrace Cultivation**: In dry terrace cultivation the fields are irrigated only during the monsoon or rice cultivation seasons and are kept dry when the harvesting is over. Cultivation is totally dependent on monsoon rain. The rain water is collected and store in a small dam or lake known as 'Zabou' constructed across the streams or channel, where ran-away water are collected for cultivation. In dry season, after harvest, the farmer grows multiple crops such as potato, tomato, beans, cabbages, onion, pea, corianders etc.

The table 4.19 shows the major types of agricultural cultivation in the study villages. It is found that about 67.11% of the household practices Wet Terrace Rice Cultivation (WTRC), 25.33% of them practice Dry Terrace Rice Cultivation and about 2.67 % of the household practices jhum cultivation in the 2 Districts. Only about 2.67% of the household practice fruits cultivation and 2.22% of the household practice farm related and gardening activities along with it in Kohima District.

It should not be confuse that besides these major types of cultivation, the household are practicing multiple methods of farming. It was observed that every household is cultivating rice either in river valleys or terrace benches constructed on the hill slope, irrigated with run-away water from the nearby streams or on jhum fields. Besides, each household practice multiple methods of cultivation along with the cultivation of paddy such as growing vegetables, fruits or other farm related activities. Multiple reasons are given as to why rice is mostly cultivated among the farming household. Rice is the staple food of the Nagas, and the tropical climate is suitable for the cultivation of rice. It is easy to cultivate and it takes 5- 6 months to finish one cycle

of production i.e. till harvest. As there is no other industry, people cultivate only what is needed for self-consumption and kept themselves engaged in agriculture sector.

Table 4.19: Types of Agriculture Cultivation among the Surveyed Household

Type of cultivators	Kohima	Chedema	Total Kohima Dist.	Phek	Ketsapo	Total Phek Dist.	All
No. of Wet Terrace Rice Cultivating Household	33 (55.93)	28 (57.14)	61 (56.48)	51 (76.12)	39 (78.00)	90 (76.92)	151 (67.11)
No. of Dry Terrace Rice Cultivating Household	12 (20.34)	19 (38.78)	31 (28.70)	15 (22.39)	11 (22.00)	26 (22.22)	57 (25.33)
No. of Jhum field cultivating Household	3 (5.08)	2 (4.08)	5 (4.63)	1 (1.49)	--	1 (0.85)	6 (2.67)
No. of household practice only farm related and veg. Growing (Gardener)	5 (8.47)	--	5 (4.63)	--	--	--	5 (2.22)
No. of household practicing Orchard (fruits growers)	6 (10.17)	--	6 (5.56)	--	--	--	6 (2.67)
Total	59 (100)	49 (100)	108 (100)	67 (100)	50 (100)	117 (100)	225 (100)

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The most intriguing thing that raises the curiosity of today's generation is the profitability of the investment in the cultivation of rice. To know a little more about its profitability let us see into detail the methods and practice of rice cultivation. The types of manual work require for cultivation of paddy in jhum fields, dry terrace fields and wet terrace fields differs (table 4.20), which has to be done during a specific period of time. For example there are four seasons of cultivations popularly known in local dialect as:-

i) **Tsakha tü** or sowing season which falls from March to April
ii) **Khutho Tü** or transplanting season which begins from May to August
iii) **Khurhü tü** or weeding season from August to September
iv) **Yirhü tü** or harvest seasons from October to November

Khuto tü or transplanting season- May to August is the busiest time of the year for the farmers, as the terrace cultivation are mostly dependent on monsoon rain and all

transplanting of paddy seedling has to be completed before the season. It is believed that transplantation of seedling after the longest day (21st June) does not bear as good fruits as those done earlier. During each season, every farmer rushes to complete specific type of work and it is from May to August, maximum exchange of manual labor takes place.

There are different types of work to be carried out in each production cycle. From January to March at least five different types of work are carried out such as burning of the cut down trees, digging the soil, and breaking down the sturdy soil, burning the twig together with the soil and re-ploughing it to make the final bed for sowing the seeds especially for jhum cultivation. From the later part of May to the beginning of August, hectic preparation are on for the transplanting to paddy seedling in the fields and for which mixing the dugout soil with rain water and remixing it into mud are done. Once it is ready, the seedlings from the jungle are pulled out and transplanted in the mud. Big family is always considered a blessing, as there are more hands to help-out in such a rush season. Smaller families have to look for the help of the neighbors and from big families.

There are approximately 18(eighteen) different types of work required in the dry terrace cultivation. In order to produce one khi (giant bamboo basket) of paddy that is equal to 8 bags. 1 bag of paddy is equivalent to 6 tins of paddy which is 6*8=48 tins. A bag of paddy is equal to 50 kg of paddy. Therefore, 1 Khi=8 bags =48 tins. The cost of one tin of paddy is Rs. 180/- (maximum) which if grind and the husk removed is equivalent to 7 kg of rice. The price of 1 kg rice is equal to Rs.30/-. Therefore, if 62 days of man- labor days are invested to produced 1 khi which will give 7 kg of rice *48 tins =336 kg of rice that is in money term it is 336 kg* Rs.30= Rs. 10,080/-

Therefore, the daily wage earning will be equivalent to Rs. 10080 divided by the no. of days invested which is 62 days. Thus, it will be equal to Rs. 162.58 per day (Rs.10, 080÷62). Basing on the total output produced a farmer will earn Rs.162.58 per day, while in actual practice; the average daily wage is paid at the rate of Rs. 375 (i.e. Rs. 350 for female and Rs. 400 for male). If this is converted into money term as per actual practices then a farmer should produce the final output worth Rs.375*62 day = Rs. 23,250, otherwise, he is foregoing a loss of Rs. 13,170 (i.e. Rs.23,250-Rs. 10,080=13170).

Table 4.20: Stages of Preparation for Rice Cultivation

Sl.no	Different types of work required	No. of person/days required to cultivate 1 khi of paddy(1 khi= 8 bags=48 tins, 1 tin= Rs. 180/- approx.		
		Jhum	Dry Terrace	Wet Terrace
1	Cutting down trees/ forest for cultivation	5	NA	NA
2	Burning the trees/ bushes	3	NA	NA
3	Digging the soil in the terrace field	10	10	NA
4	Breaking the dugout soil in the terrace field	7	3	NA
5	Burning the weeds/twig and soil	5	NA	NA
6	Clearing the jungle & ploughing for sowing paddy seeds	NA	1	1
7	Burning the weeds/twig soil and re-ploughing	NA	1	1
8	Re-ploughing & Sowing the seeds	6	1	1
9	Clearing the terrace walls	NA	3	2
10	Clearing the water canal during monsoon rain	NA	3	2
11	Digging the mud in the terrace field	NA	NA	7
12	Mixing the soil with water	NA	6	NA
13	Remixing all the soil into mud	NA	3	2
14	Pulling out the seedling from the jungle	NA	1	1
15	Transporting the pulled out seedling from the jungle to the terrace field	NA	1	1
16	Transplanting the seedling	NA	7	7
17	Removing the weed among the seedling	7	2	1
18	Clearing the retaining wall	NA	2	3
19	Digging around the seedling for jhum	8	NA	NA
20	Clearing the faded leaves & weeds	3	3	2
21	Binding the paddy plants together		4	4
22	Harvesting	9	7	7
23	Transporting to home	4	4	4
24	Total	66	62	46

Source : Field survey 2013-14
Note : NA- Not Applicable

Similarly, for jhum cultivation which requires 66 days the produce 8 bags of paddy will be equal to 48 tins. Therefore, 48 tins multiplied by 7 kgs of rice is 16*7=336 kg of rice and if sold at the current market rate then 336* Rs.30=Rs. 10,080/-.

Since the no of working days is 66, then, Rs. 10, 080÷66 will be equal to Rs. 152/- per day. In WTRC, 46 working days are required to produce the same quantity of rice, hence the average daily wage will be equal to Rs.10,080÷46=Rs. 219/- per day. Therefore, working in WTRC is more profitable comparatively to that of jhum and dry TRC. A farmer is earning approximately Rs. 219/- per day in WTRC, Rs. 162 day in Dry TRC and Rs. 152 per day in jhum.

This calculation is based on the average distance of the terrace field in the two Districts of Kohima and Phek, the farmers mostly practiced. The number of day involved for clearing up the water canals, for clearing the terrace wall, for transporting the harvested paddy to home differ depending upon the terrain or distance of the canal from the source, slope of the of the terrace walls, and the distance of the field. In the survey, it was found that few households in Kohima village had given up cultivation of paddy for other crops for the past few years. These families engaged themselves fully in growing of fruits mostly oranges, rearing of cattle and grow varieties of vegetables and fruits around the farm. The cattle besides giving milk, the dung in the form of manure have high demand in the market. During the dry season of the year from October to April, a bag of manure cost Rs. 100/- and fruits like papaya cost Rs.120, whereas a tin of paddy cost Rs. 180 only. These farmers are very content about the farm activity as it keeps them busy throughout the year.

4.11: Status of Agriculture Finance in the Study Villages

The table 3.21 of the previous chapter has reflected on the different categories of the household surveyed, here the table 4.21 below shows the status of agriculture finance by the household in the study villages.

Total Farming Household Surveyed: A total of 225 farming households were surveyed which consisted of 108 households in Kohima District, and 117 households in Phek District.

Household Borrowing from Institutions: Out of the total 225 household, 137 borrowing households are identified in the 2 Districts, which comprises of 60.88% of the household. The Marginal Farmers borrowers consist of only 0.72%, 20.4% Small

Farmers, 31.4% Semi Marginal Farmers, 36.4% Medium Farmers and 10.9% Large Farmers Household borrowers.

Table 4.21: Status of Agriculture Finances in Kohima and Phek Districts

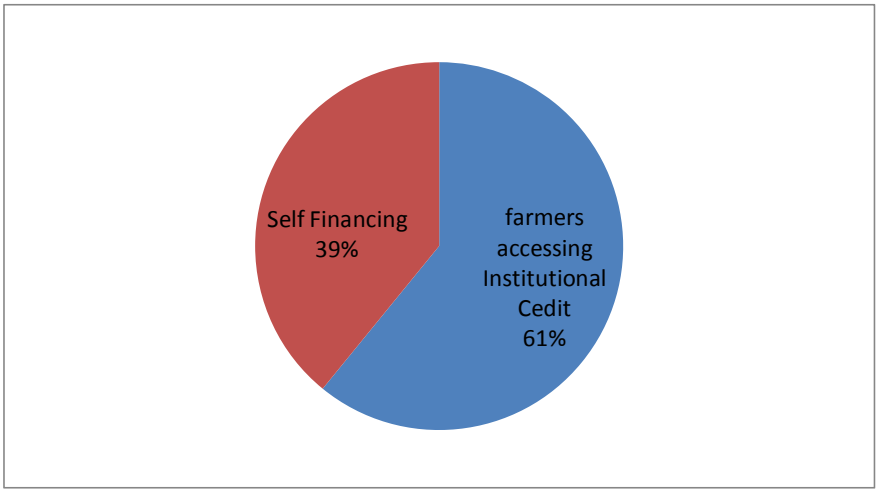
Types of Farmer	Total household surveyed			Total household borrowing from institutional source out of the total surveyed					No. of farmer Self-financing out of the total surveyed
	Kohima District	Phek District	Total	Kohima village	Chedema village	Phek village	Ketsapo village	Total	
MF	5 (4.62)	1 (0.85)	6 (2.7)	--	1 (2.5)	--	--	1 (0.72)	5 (5.7)
SF	20 (18.5)	14 (11.9)	34 (15.1)	4 (19.0)	11 (27.5)	9 (18.8)	4 (14.2)	28 (20.4)	6 (6.8)
SMF	36 (33.3)	49 (41.8)	85 (37.7)	6 (28.6)	18 (45.0)	12 (25.0)	7 (25.0)	43 (31.4)	42 (47.7)
MF	44 (40.7)	37 (31.6)	81 (36.0)	10 (47.6)	9 (22.5)	18 (37.5)	13 (46.4)	50 (36.4)	31 (35.2)
LF	3 (2.7)	16 (13.7)	19 (8.4)	1 (4.8)	1 (2.5)	9 (18.8)	4 (14.2)	15 (10.9)	4 (4.5)
ALL	108 (100)	117 (100)	225 (100)	21 (100)	40 (100)	48 (100)	28 (100)	137 (100)	88 (100)

Source : Field survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages
: Size of land holding at the village level is as per approx.

Household self-financing: About 88 household are self-financing which means 39.11% of the total sample households are self-financing, which comprises of 5.7% Marginal Farmers, 6.8% Small Farmers, 47.7% Semi Medium Farmers and 35.3% Medium Farmers. About 4.5% of Large Farmers household are self–financing.

The study covers 2 types of farming household: i) those household which are accessing institutional Credit and ii) those household which are self-financing

Figure.4.1. Status of Agriculture Finances in Kohima and Phek Districts (%)



4.12: Characteristics of the Borrowing Households

On analyzing the factors associated with accessing to formal credit the borrowing household has the following characteristic as tabulated under in table 4.22.

Caste/Social Status: Studies found that a large section of the rural poor in India especially the lower social strata are in needs of financial support from the formal sources. However, only a meager is in the position to access the financial requirement. In the context of Nagaland there is no issue relating to caste system as 100% of the inhabitants are scheduled tribe.

Educational Status: Educational level induces the borrowing community to come forward to borrow, as they are more aware about the facilities available. According to the field survey, about 49.64% of the borrowing household read up to matriculation. Only 11.68% of the farmers read above matriculation and 38.69% are illiterate but have children who are studying and have basic knowledge and information about the available loan facilities in the banking institution.

Table 4.22: Factors Determinant of the Borrowing Households in Kohima District and Phek District

Factors		Kohima	Phek	Total
Total Respondents		108 (100)	117 (100)	225 (100)
Total Borrowers		61 (56.48)	76 (64.95)	137 (61.88)
Schedule Tribes (Out of the total borrowers)		61 (100)	76 (100)	137 (100)
Borrowers status of education	**Illiterate**	19 (31.14)	34 (44.73)	53 (38.69)
	up to matriculation	33 (54.09)	35 (46.05)	68 (49.64)
	Above matriculation	9 (14.75)	7 (9.21)	16 (11.68)
Size of landholding (Average/approx.)		8.25 ha	14.89 ha	23.14 ha
Use new methods of production/ intensive cropping methods		60 (98.36)	73 (96.05)	132 (96.35)
Debt position	**owning old dues**	48 (44.44)	63 (53.84)	111 (49.33)
	owning no dues	60 (55.55)	54 (46.15)	114 (50.66)
Average Annual income from NFAs		113355	62271	81813
Total family members in agriculture(Work dependency)	**2 members in a family**	39 (63.93)	35 (46.05)	74 (54.01)
	2 to 4 members in a family	17 (27.86)	25 (32.89)	42 (30.65)
	above 4 members in a family	5 (12.5)	16 (21.05)	21 (15.32)
Average Annual income of the family (in Rs.)		183927	194814	189370.5
Average family size		5	13	9
Average annual per capita income(av. Income/av. size of the family)		36785.4	14985.6	25885.5

Source : Field survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages
: NFA-Non Farm Assets

Size of Agriculture Land Holdings: The size of land holding is an important factor that determines borrowing. About 29.9% of the borrowing households are from Semi Medium Farmers and 37.9% from the Medium Farming category. Out of the 19 large farming household surveyed all these household are borrowing from the banking

institutions and comprises of 13.8% of the household borrowers. Only 1 household out of the 6 household belonging to the marginal farming class was borrowing which is 0.72% out of the total 137 household borrowers as reflected in table 4.21. Farmers mostly Semi Medium and Medium Farmers are looking for better utilization of their available land. So also the large land holders want to make good investment out of it. However, Marginal Farmers are not willing to take up new methods of cultivation; they feel more secure in sticking to the old methods of cultivation, since their land size is very small and require less capital.

Use of Modern Methods and Technique of Production: The introduction of modern technique and methods of productions into agriculture requires better tools and equipment, hence farming community looks for financial support to improve production. It was observed that about 96.35 % of the borrowing farmers are mostly from household who are taking up new ventures in the methods and practice of agriculture cultivation, mostly in the cultivation of marketable vegetables and fruits, piggery and cattle farms and even to set up agro-business such as an outlet for the agriculture products in the towns or localities.

Intensive Cropping Pattern*:* Timely completion of various agricultural operation requires higher capital than before, as the farmers practices intensive cropping pattern on single piece of land throughout the year. Since, the cultivation of paddy is a time bound activity, a farmer is left unemployed for a quite a good period of time. Agriculture loan help a farmer to utilize his free time by engaging in the useful productive manner. About 96.35% of the borrowing households are engaged in intensive pattern of farming.

Debt/Old Dues: One factor that determines borrowing is the outstanding dues accumulated by a farmer. If the impact of old loans are inversely proportionate to the current production, the farmer will be reluctant to borrow. Pending or accumulating dues are not known to a Naga farmer for agriculture activity until recently with 49.33% of the farmers are indebted to institutional credit and 50.66% with no old dues neither from institutional nor non-institutional sources. About 79% of the farmers are first time borrowers and only 23% of the farmers are borrowing for more than once. The VDB as

the financial guarantor help and encourages the farmers to come forward to borrow for new initiative in agriculture.

Non-Farm Asset: In the context of major Indian States, the possession of non-farm asset also determines the farmer to borrow as it stands as a collateral security to the borrowing party as well as the supplier side of the loan. In Nagaland since land mortgage is not possible due to constitutional provisions, Non-farm assets are an important collateral security. Cases, where VDBs are taken as guarantors see to the overall issues relating to the borrowers payment. During the survey, there were very few borrowers as they have to bear the risk themselves. Therefore, it was observed that only those rich farmers who have some sort of income from non-farm activities are coming up for institutional loan. When asked if they (farmers) want to borrow for agriculture activities, one farmer at Ketsapo replied, "The withdrawal of VDB as the signatory guarantor for the villagers has block our way to reach the banking institution".

Work Dependency Ratio: Household with the greater number of workers and have some sorts of non-farm incomes are mostly accessing the institutional source of agriculture finance comparing to household with low work force and with no source of income from non-farm assets. The average family size of both the borrowing household and non-borrowing households are 6 members. Families with 2 members in agriculture sector constitute 54.01% of the borrowing household. While families with 2-4 members in agriculture are 30.65% and families with more than 4 members are 15.32% of the borrowing household. However, the work dependency ratio to agriculture sector in the borrowing household is comparatively more than those of the non-borrowing household.

Per Capita Income: The per capita income of a household influences the borrowing of the farmer for several reasons. Several studies concluded that higher per capita income of a household tends to borrow less; however, in the context of the study village literate families with some sort of income either from the government sectors or private sectors is becoming more ambitious even in agriculture cultivation than before. The illiterate are mostly risk averse and are not willing for a change in the methods of

cultivation. Their general awareness about the available loan facilities in the banking institution is also poor.

Table 4.23: Factors Determinant of Borrowing Household in Kohima Village and Chedema Village under Kohima District

Factors		Kohima	Chedema	All
Total Respondents		59 (100)	49 (100)	108 (100)
Total Borrowers		21 (35.59)	40 (81.63)	61 (56.48)
Schedule tribe (Out of the total borrowers)		21 (100)	40 (100)	61 (100)
Borrowers status of education	**Illiterate**	3 (14.29)	16 (40.00)	19 (31.14)
	up to matriculation	13 (61.90)	20 (50.00)	33 (54.09)
	Above matriculation	5 (23.81)	4 (10.00)	9 (14.75)
Size of land holding (Average/approx.)		5.5 ha	2. 75 ha	8.25 ha
Use new methods of production/ intensive cropping methods		21 (100)	39 (97.5)	60 (98.36)
Debt	**owning old dues**	15 (25.42)	33 (67.34)	48 (44.44)
	owning no dues	44 (74.51)	16 (32.65)	60 (55.55)
Average Annual income from NFA		81531	31824	113355
Total family members in agriculture(Work dependency)	**2 members in a family**	18 (85.71)	21 (52.5)	39 (63.93)
	2 to 4 members in a family	3 (14.28)	14 (35.00)	17 (27.86)
	Above 4 members in a family	--	5 (12.5)	5 (12.5)
Average Annual income of the family		125054	58873	91963.51
Average family size		5	5	5
Average annual per capita income(av. Income/av. size of the family)		25010.8	11774.6	18392.7

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

Kohima Village: As given in table 5.23, 100% of the borrowers are schedule tribes and about 14.29% of borrowers are illiterate in Kohima village. 61.90% of the

borrowing household read up to matriculation while 23.81% of the borrowers read above class X or more. About 15(25.42%) of the household in Kohima village are in debt but 44(74.5%) of the household does not owed any due. About 85.71% of the borrowing households in Kohima village have 2 members in agriculture. There are 3 household in Kohima with more than 2 members in the family in agriculture. No family was found with more than 4 members in agriculture. The earning of the borrowing households or the annual average earning is Rs. 25010.8 approximately in Kohima.

Chedema Village: About 40% borrowers are illiterate in Chedema Village, and 50% of the borrowing household read up to class X and 10% above class X. It was observed that most of the borrowers in Chedema are growing passion fruits, which may not be very favorable to the climatic condition and about 22.5% of the passion fruit grower owed debt. About 52.5% of household in Chedema village have 2 members in agriculture. There are 14 household with more than 2 members in the family in Chedema and 5 household with more than 4 members in the family engage in agricultural sector.

The approximate annual earning of the borrowing household and average earning is calculated at Rs.11774.6 in Chedema village. Similarly for Phek District, the determinant factors are detailed in table 5.24.

Phek Village: In Phek village, 39.58% of the borrowing households are illiterate, while 50% of the borrowers read up to matriculation and 10.42% above matriculation. In Phek District the size of land holding is comparatively bigger than that of its counterpart. The approximate size of land holding is 6.90 ha to 7.99 ha, which means majority of them are under the category of Medium Farmers. It was also observed that the borrowing households are enthusiastic to acclimatize new methods of farming mostly the market oriented products. About 59.70% of the borrowers were under debt burden. About 50% of the KCC borrowers in Phek District in 2009-10 are repaid through the village Grant-In-Aids. Due to such matters the office of the VDB in Phek village no longer encourages the farmers to borrow. The work dependency ratio to agriculture is high about 58.33% in Phek village have at least 2 members in the family

in agriculture, 27.08% of the household with more than 2 members (i.e. 2 to 4 members) and 4.58% above 4 members in agriculture as shown in the table.

Table 4.24: Factors Determinant of Borrowing Household in Phek Village and Ketsapo Village under Phek District

Factors		Phek	Ketsapo	All
Total Respondents		67 (100)	50 (100)	117 (100)
Total Borrowers		48 (71.64)	28 (56)	76 (64.95)
Schedule tribe(out of the total borrowers)		48 (100)	28 (100)	76 (64.95)
Borrowers status of education	**Illiterate**	19 (39.58)	15 (53.57)	34 (44.73)
	up to matriculation	24 (50.00)	11 (39.29)	35 (46.05)
	Above matriculation	5 (10.42)	2 (7.14)	7 (9.21)
Size of land holding (Average/approx.)		7.99 ha	6.90 ha	7.44 ha
Use new methods of production/ intensive cropping methods		45 (93.75)	28 (96.42)	73 (96.05)
Debt position	**owning old dues**	40 (59.70)	23 (46.00)	63 (53.84)
	owning no dues	27 (40.29)	27 (54.00)	54 (46.15)
Average Annual income from NFA		39179	23092	31135.5
Total family members in agriculture(Work dependency)	**2 member in a family**	28 (58.33)	7 (25.00)	35 (46.05)
	2 to 4 members in a family	13 (27.08)	12 (42.85)	25 (32.89)
	above 4 members in a family	7 (14.58)	9 (32.14)	16 (21.05)
Average Annual income of the family		106301	88513	97407
Average family size		6	7	6.5

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

Ketsapo Village: Whereas in Ketsapo Village 53.57% are illiterate 39.29% read up to 10 standard and 7.14% above matriculation respectively. About 46.00% in Ketsapo village were under debt burden. The work dependency ratio to agriculture is

25.00% of the household have at least 2 members in the family, 42.85% with more than 2 members and 32.14% above 4 members in the family respectively.

4.13: Logit Regression Model for Probability of Institutional Credit Accessibility - Village Wise Analysis

In order to understand the importance of the above factor determinant of Institutional credit, the Logit model examines the probabilities of credit market extent among the villages in selected Districts.

Specification of variables:

Dependent Variable: 1= if the household accesses credit from formal institution

0= if otherwise.

Explanatory Variables

Technology: 1 = if the farmer using high crop intensity (with technology)

0 = if otherwise.

EDU: 1 = if household head is literate,

0 = if otherwise.

Total ownership holdings of household (Land Size in Ha)

Working population in the household (Nos.)

The value of non-farm Assets of the family (in Rs.)

The value of debt of the household (In Rs.)

The value of per capital Income of the household (in Rs.)

The results of the Binary Logit model for Kohima District is in table 4.25

The coefficients of all the variables in the District have carried expected signs. The coefficient of farmer's education and technology are statistically significant. The results show that the variables such as education and technology are positively associated with the dependent variable and have positive signs too. The result reveals that in Kohima village, if the farmer is an educated person or practice modern technological methods of farming, the probability of accessing institutional credit is higher at 1% level of significance each. In contrast, in Chedema village the debt position indicate a negative significance level of 10% and level of education is positive significance with dependent variable. It reveals that if the farmers have old dues in the

bank, the chance to avail credit is less. Whereas, if the farmer possesses better educational position, he can access institutional credit to improve his condition indicated by 10% level of significance and 5% level of significance with respect to technology. However, for both the villages in Kohima District, when all the variables are taken together, only education and technology shows significant value of 1% each and the entire variable have the expected sign. It would be pertinent to examine the institutional credit accessibility in Phek village and Ketsapo village under Phek District too. The results are shown in table below.

Table.4.25: Logit Regression for Institutional Credit Access in Kohima Village and Chedema Village under Kohima District.

Sl. No	Variables	Kohima village	Chedema village	Total
1	Constant	-24.824	17.304	-1.464
2	Education	3.409 (2.58)*	1.935 (1.91)***	1.529 (2.67)*
3	Technology	4.555 (3.56)*	2.744 (2.67)*	3.413 (5.51)*
4	Land Size	0.114 (0.70)	-2.501 (1.44)	-0.084 (0.82)
5	Working population	0.526 (0.55)	1.217 (0.48)	0.584 (1.22)
6	Family Income	0.301 (0.27)	-0.870 (0.35)	0.113 (90.13)
7	Non-Farm Assets	1.958 (0.93)	-2.678 (1.78)	-0.356 (0.35)
8	Debt Position	2.436 (1.57)	-1.731 (1.97)***	1.280 (1.84)
Log Likelihood No. Observation Probability		-17.518 59 0.000	-21.870 49 0.007	-41.737 108 0.000

Source : Field Survey 2013-14
Note : Figures in parenthesis indicating‘t’ values
***, **, * Indicates 10%, 5% and 1% level of significance

Table 4.26: Logit Regression for Institutional Credit Access in Phek Village and Ketsapo Village under Phek District

Sl. No	Variables	Phek Village	Ketsapo Village	All
1	Constant	-4.116	20.875	0.774
2	Education	-0.452 (0.65)	1.096 (1.14)	0.256 (0.50)
3	Technology	3.190 (3.83)*	4.025 (3.32)*	3.150 (4.90)*
4	Land Size	0.653 (1.24)	0.230 (1.88)***	0.014 (0.10)
5	Working population	0.009 (0.03)	0.474 (0.64)	-0.023 (0.08)
6	Family Income	1.533 (1.66)	2.464 (2.28)**	1.086 (2.41)**
7	Non-Farm Assets	0.745 (2.05)	1.534 (2.32)**	-0.781 (2.48)**
8	Debt Position	-0.794 (1.75)***	0.612 (1.86)***	-0.683 (1.75)***
Log Likelihood No. Observation Probability		-27.936 67 0.000	-19.615 50 0.000	-49.810 117 0.000

Source : Field Survey 2013-14
Note : Figures in parenthesis indicating‘t’ values
***, **, * Indicates 10%, 5% and 1% level of significance

In Phek village, technology shows a 1% positive level of significance and 10% negative significance in case of debt position. Whereas, in Ketsapo village technology indicate 1% level of significance and 5% of significance in family income and NFAs, while 10% level of significance in debt position. The overall factors in Phek District taken together, indicates that all the variables shows expected sign and the level of technology, family income, NFAs and debt position are satisfactorily significant with dependent variable at 1%, 5% and 10% level of significance respectively.

4.14: Recapitulation

The emerging scenario in the Indian agriculture sector witnessed a huge flow of institutional credit coupled with huge overdue and yet still high demand gap due to

growing regional imbalance. In the study village, it was observed that there is an increasing demand for institutional credit by farmers for intensive cropping and for Agri. and Allied Activities. Further, it was found that there is inadequate banking infrastructure along with lack of awareness about institutional credit. Therefore, accessibility of institutional credit is a dream far away from reality. The VDB's role as the guarantor has tremendously help the rural farmer to come forward for institutional finance. Appropriate strategy with the implementing agency and the VDB anticipate an opulent prospective.

CHAPTER V
IMPACT OF AGRICULTURE CREDIT AND ITS DISTRIBUTIONAL CHALLENGES

5.1: Introduction

The greatest stimulant of non-agriculture economy is the sustained agricultural growth in rural areas. Industrial revolution was made possible through an increase in agricultural production. In a good agriculture year food is adequate in relation to effective demand, prices remain stable, agro business and industries look up, employment improves and rural poverty recedes. In fact the total economy becomes buoyant. According to World Bank Report of 1980, a 1% increase in agriculture growth of India is correlated to 0.5% increased in internal growth bringing about 0.7% increase in national income[100]. In India, out of the total land area of 3,166,414 sq. km[101] , 141.56 million hectare is the net sown area. The gross irrigated area is 89,360 thousand hectares and the net irrigated area is 63,601 thousand hectares (2010-11 census) producing 95979.9 thousand tons of rice and 86874.0 thousand tons of wheat. In this chapter the methods and practice of agriculture activities of the household borrowers, the purpose of borrowing and are discussed. Further, the impacts of borrowing on the level of income, output and employment generation are analyzed. It also examines on the issues and challenges of institutional credit and brought out some suggestion for the same.

5.2: Major Agriculture Activities of the Household Borrowers

Throughout the survey across the 4 villages of the 2 Districts, farmers are borrowing mainly for 8 different agricultural activities such as:

i) Terrace Rice Cultivation(TRC)
ii) Jhum cultivation
iii) Tree plantation
iv) Gardening mostly growing varieties of vegetables
v) Growing fruits

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100. Ahmad, Nawaz (2011), "Impact of Institutional Credit on Agricultural Output: A case study of Pakistan". *Theoretical and Allied Economics.* Vol. XVIII (20011), No.10 (563), pp. 5-16.
101. http://www.googleweblight.com/?lite_url=https://en.m.wikipedia.org/wiki/Geography.

vi) Piggery and farm related activities

vii) Small agro- business

viii) Growing flowers

The detail activities of the borrowing household in Kohima and Phek Districts are reflected in the table 5.1 given below.

Table 5.1: Types of Agriculture Cultivation of the Borrowing Household in Kohima District and Phek District

Purpose of borrowing	Kohima	Phek	All
No. of household borrowing for Terrace Rice Cultivating (TRC)	1 (1.6)	3 (3.95)	4 (2.9)
No. of household borrowing for Jhum field	--	1 (1.32)	1 (0.72)
No. of household borrowing for tree plantation	6 (9.83)	5 (6.58)	11 (8.02)
No. of household borrowing for Growing veg.	9 (14.8)	31 (40.79)	40 (29.19)
No. of household borrowing growing fruits	20 (32.78)	8 (10.53)	28 (20.43)
No. of household having Piggery and farm related	11 (18.03)	10 (13.16)	21 (15.32)
No. of household borrowing for agri-business	9 (14.75)	18 (23.68)	27 (19.70)
No. of household borrowing for growing flowers	5 (8.2)	--	5 (3.64)
Total	**61 (100)**	**76 (100)**	**137 (100)**

Source : Field survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

In the survey it was found that only 2.9% of the farmers are borrowing for TRC out of 137 household borrowers. In Kohima District there is 1 household (1.6%) borrower for TRC out of the total 61 household borrowers and 3 household (3.95%) in Phek District out of 76 household borrowers respectively. Only one household in Phek District was found borrowing for Jhum cultivation. Tree plantation farmers comprises of 8.02% of the total borrowing household which consist of 9.83% household borrowers

in Kohima District and 6.58% in Phek District. About 29.19% of the household are borrowing for vegetable gardening, mostly growing varieties of vegetables for sell and they comprised the maximum number of borrowing household. It consists of 14.8% in Kohima District and 40.79% in Phek District. About 20.43% of the household borrowers are growing fruits and it comprises of 32.78% Kohima District and 10.53% in Phek District. Among the household borrowers, 15.32% are rearing pigs and other farms related activities. It consists of 18.03% in Kohima District and 13.16% in Phek District. Agro-base business household borrowers consist of 19.70% out of the total household borrowers. It comprises of 14.75% in Kohima District and 23.68% in Phek District. Floriculturist comprises of 3.64% out of the total household borrowers.

It is indicated in table 5.1, that the agriculture activities taken up by the household borrowers in the two Districts differ. In Kohima District more household are borrowing for growing fruits which is consisting 32.78%. While in Phek District, majority of the household borrowers are cultivating marketable vegetables which comprises of 40.79%. Accordingly, a good number of household borrowers consisting of 23.68% are availing credit for agro-base businesses in Phek District. In Kohima District none of the household is found borrowing for jhum cultivation, while in Phek it is the same for floriculture.

The detail village-wise and activities-wise of the borrowing household in Kohima District is shown in the table 5.2 below. In Kohima village, no household are borrowing for TRC, whereas in Chedema village 1 household (2.50%) was found borrowing for TRC. There is no household borrower for jhum cultivation neither in Kohima village nor in Chedema Village of Kohima District. However for tree plantation, in Kohima village about 9.5% of the household is borrowing for tree plantation, whereas, in Chedema village only 10.0% of the households are borrowing for tree plantation. Similarly, household borrowing for growing of vegetable consist of 9.5% of the household borrowers in Kohima village and 17.15% household borrowers in Chedema village respectively. In Kohima Village, about 9.5% of the fruit growers are found accessing institutional source of finance, and about 45.0% of the borrowing households in Chedema village are borrowing for growing fruits mostly passion fruits.

Table 5.2: Types Agriculture Cultivation of the Borrowing Household in Kohima Village and Chedema Village under Kohima District

Purpose of borrowing	Kohima Village	Chedema village	All
	Total no.	Total no.	
No. of household borrowing for Terrace Rice Cultivating	--	1 (2.50)	1 (1.64)
No. of household borrowing for Jhum field	--	--	--
No. of household borrowing for tree plantation	2 (9.5)	4 (10.0)	6 (9.83)
No. of household borrowing for Growing veg.	2 (9.5)	7 (17.50)	9 (14.75)
No. of household borrowing growing fruits	2 (9.5)	18 (45.0)	20 (32.78)
No. of household having Piggery and farm related	6 (28.57)	5 (12.50)	11 (18.03)
No. of household borrowing for agri- business	4 (19.0)	5 (12.50)	9 (14.75)
No. of household borrowing for growing flowers	5 (23.8)	--	5 (8.20)
Total	**21 (100)**	**40 (100)**	**61 (100)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

For Piggery and farm related activities about 28.57% of the household borrowers are in Kohima village, whereas, in Chedema village, 12.50% of the household borrowers are undertaking the same project. In Kohima village 19.0% of the household borrowers are vegetable vendors, while in Chedema village, it consists of 12.50% of the household borrowers. About 23.8% of the household borrowers in Kohima village are growing flowers. In Kohima village floriculture is becoming a booming business due to high market demand. The table above reveals that maximum of the farmer borrowers are concentrated in piggery or farm related project and floriculture in Kohima village, whereas none of the households are borrowing for TRC and Jhum cultivation. While in Chedema village, most of the farmer borrowers are accessing credit for growing of fruits and vegetables, but none for jhum and flowers rearing. Similarly, Phek District, village-wise and activities-wise of the borrowing household is indicated in table 5.3 below:

Table 5.3: Types of Agriculture Cultivation of the Borrowing Household in Phek Village and Ketsapo Village under Phek District

Purpose of borrowing	Phek	Ketsapo	All
	Total no. & %	Total no. & %	
No. of household borrowing for Terrace Rice Cultivating (TRC)	2 (4.17)	1 (3.57)	3 (3.95)
No. of household borrowing for Jhum field	1 (2.08)	--	1 (1.32)
No. of household borrowing for tree plantation	4 (8.33)	1 (3.57)	5 (6.58)
No. of household borrowing for Growing veg.	24 (50.0)	7 (25.00)	31 (40.79)
No. of household borrowing growing fruits	5 (10.42)	3 (10.71)	8 (10.53)
No. of household having Piggery and farm related	5 (10.42)	5 (17.86)	10 (13.16)
No. of household borrowing for agri- business	7 (14.58)	11 (39.29)	18 (23.68)
No. of household borrowing for growing flowers	--	--	--
Total	**48 (100)**	**28 (100)**	**76 (100)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The table indicates that majority of the borrowers in Phek District are accessing credit for growing of vegetables in both the study villages, followed by agri-business sector, piggery and growing of fruits. Piggery is also a promising project in the District with the restriction of importing swine products. Majority of the farmers are spending their own for farming in TRC and Jhum cultivation and other plantation work in both the villages during the study period. In Phek village the TRC farmer borrowers comprises of 4.17% of the household borrowers and 3.57% household borrowers in Ketsapo village. For jhum cultivation about 2.08% of the household in Phek village had borrowed, whereas none of the household in Ketsapo village. About 8.33% of the household borrower in Phek village are borrowing for tree plantation, while in Ketsapo village, tree plantation household borrowers comprises of 3.57%. Similarly, in Phek village the vegetable farmers consisted of 50.00% household borrowers and 25.00% in Ketsapo village. The household borrowers for fruit growers are 10.42% and 10.71% in Phek village and Ketsapo village respectively. In Phek Village 10.42% of the household

borrowers are undertaking piggery and farm related project and in Ketsapo village about 17.86% of the household borrowers are undertaking the same project. In Phek village, 14.58% of the household borrowers are vegetable vendors, whereas in Ketsapo village it consists of 39.29% of the household borrowers. No household was found borrowing for growing of flowers in both the villages under Phek District**.**

Several empirical studies concluded that small and marginal farmers who are the needy group of farmers for institutional credit are neglected and it is the rich /large farmers and the affluent section of the society, who are in a favorable condition to access institutional finances for agriculture. We shall see this in the context of the study villages and in the 2 Districts in Nagaland. The table 5.4 below indicates the categories of borrowing household across the 2 Districts and the details on different agricultural activities as previously reflected. The table indicates that the marginal farmers comprises of only 0.72% of the household borrower and is practicing TRC in Kohima District, whereas the small farmer borrowers comprise of 24.59% in Kohima District and majority of them (5.10%) are growing fruits. In Phek District the small farmer borrowers comprise of 17.10%. The total small farmer borrowers in the 2 Districts are 20.43%. However for the case of semi medium farmer, it consists of 17.51% in Kohima District and 25.00% in Phek District totaling to 42.51%. Growing fruits is the major activity among the semi medium farmers. In contrary to that, the medium farmers borrowers consist of 26.22% in Kohima District and 40.78% in Phek District avail institutional credit. Majority of the farmer borrowers are using credit for growing fruits in Kohima District. While in Phek District, about 15.78% of the household borrowers of the medium farmers are growing of marketable vegetables, followed by agri-business and piggery.

Table 5.4: Types of Agriculture Cultivation of the Borrowing Household among Different Categories of Farmers in Kohima District and Phek District

Categories of Farmers	Marginal farmers		Small Farmers		Semi Medium Farmer		Medium Farmer		Large Farmer		Total		G/T (KOHIMA & PHEK)
Types of agri. cultivation	KOHIMA	PHEK	KOHIMA	PHEK	KOHIMA	PHEK	KOHIMA	PHEK	KOHIMA	PHEK	KOHIMA	PHEK	
No. of household borrowing for Terrace Rice Cultivating	1 (0.72)	--	--	3 (2.18)	--	--	--	--	--	--	1 (1.63)	3 (3.94)	4 (2.91)
No. of household borrowing for Jhum field	--	--	--	--	--	1 (0.72)	--	--	--	--	--	1 (1.31)	1 (0.72)
No. of household borrowing for tree plantation	--	--	--	--	2 (1.45)	1 (0.72)	2 (1.45)	3 (2.18)	2 (1.45)	1 (0.72)	6 (9.83)	5 (6.57)	11 (8.02)
No. of household borrowing for Growing veg.	--	--	3 (2.18)	4 (2.91)	3 (2.18)	7 (5.10)	3 (2.18)	12 (8.57)	--	8 (5.63)	9 (14.75)	31 (40.78)	40 (29.19)
No. of household borrowing growing fruits	--	--	5 (3.64)	--	9 (6.56)	3 (2.18)	6 (4.37)	3 (2.18)	--	2 (1.45)	20 (32.78)	8 (10.52)	28 (20.43)
No. of household having Piggery and farm related	--	--	3 (2.18)	3 (2.18)	4 (2.91)	2 (1.45)	4 (2.91)	4 (2.91)		1 (0.72)	11 (18.03)	10 (13.15)	21 (15.32)
No. of household borrowing for agri- business	--	--	3 (2.18)	3 (2.18)	3 (2.18)	5 (3.64)	3 (2.18)	9 (6.56)	--	1 (0.72)	9 (14.75)	18 (23.68)	27 (19.70)
No. of household borrowing for growing flowers	--	--	1 (0.72)	--	3 (2.18)	--	1 (0.72)	--	--	--	5 (8.19)	--	5 (3.64)
Total	**1 (0.72)**	--	**15 (10.94)**	**13 (9.48)**	**24 (17.51)**	**19 (13.86)**	**19 (13.86)**	**31 (22.62)**	**2 (1.45)**	**13 (9.48)**	**61 (100)**	**76 (100)**	**137 (100)**

Source : Field survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

Similarly, about 10.94% of the borrowers are large farmers and it comprises of 1.45% of the household borrowers in Kohima District and 9.48% in Phek District respectively. The data reveals that the farmer borrowers access credit from institutional sources and are utilizing for different purposes in both the Districts. It is shown in table 5.4 that the medium farmers are among the largest group of household borrowers consisting 36.49%. The second largest groups of farmer borrowers are the semi medium farmer which consists of 31.38% and the small farmer with 20.43% of the household borrowers in the third slot. The large farmer with 10.94% of the household borrowers and the marginal farmer of only 0.72% of the household borrower. Out of the total 19 large farmers households identified in the study villages 15 of the household are accessing institutional credit. The detail village–wise borrowing status among the different categories of farmers and the type of agriculture cultivation by each household borrower are reflected in the given table.

Table 5.5: Distribution of Farmer Borrowers among Different Categories in Kohima Village under Kohima District

Categories of Farmers	MF	SF	SMF	MF	LF	All
No. of household borrowing for Terrace Rice Cultivating	--	--	--	--	--	--
No. of household borrowing for Jhum field	--	--	--	--	--	--
No. of household borrowing for tree plantation	--	--	--	1 (4.76)	1 (4.76)	2 (9.52)
No. of household borrowing for Growing veg.	--	--	--	2 (9.52	--	2 (9.52)
No. of household borrowing growing fruits	--	--	1 (4.76)	1 (4.76)	--	2 (9.52)
No. of household having Piggery and farm related	--	2 (9.52)	1 (4.76)	3 (14.28)	--	6 (28.57)
No. of household borrowing for agri- business	--	1 (4.76)	1 (4.76)	2 (9.52)	--	4 (19.04)
No. of household borrowing for growing flowers	--	1 (4.76)	3 (14.28)	1 (4.76)	--	5 (23.80)
Total	**--**	**4 (19.04)**	**6 (28.57)**	**10 (47.61)**	**1 (4.76)**	**21 (100)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

There is no marginal farming household borrowing in Kohima village. About 19.04% of the household are small farmers, borrowing for farm related activities 9.52%, agri-business (4.76%) and growing flower (4.76%) in Kohima village. In Kohima village 28.57% household borrowers are semi medium farmers of which 14.28% are growing flowers, 4.76% of the household are into piggery and farm related activities. There is 1 household each for fruits (4.76%), and agri-business (4.76%) respectively. The medium farmers constituted the maximum borrowing household of 47.61%. These household borrowers are mostly undertaking piggery and farm related project (14.28%), growing vegetables (9.52%), agro-business (9.52%) and flower rearing with 4.76%. Only 1 large farming household is borrowing for tree plantation purpose in Kohima village. The case of Chedema village of Kohima District is reflected in table 5.6 below.

Table 5.6: Distribution of Farmer Borrowers among Different Categories in Chedema Village under Kohima District

Types of agri. cultivation	**MF**	**SF**	**SMF**	**MF**	**LF**	**All**
No. of household borrowing for Terrace Rice Cultivating	1 (2.5)	--	--	--		1 (2.5)
No. of household borrowing for Jhum field	--	--	--	--	--	--
No. of household borrowing for tree plantation	--	--	2 (5.00)	1 (2.5)	1 (2.5)	4 (10.0)
No. of household borrowing for Growing veg.	--	3 (7.5)	3 (7.5)	1 (2.5)	--	7 (17.5)
No. of household borrowing growing fruits	--	5 (12.5)	8 (20.00)	5 (12.5)	--	18 (45.0)
No. of household having Piggery and farm related	--	1 (2.5)	3 (7.5)	1 (2.5)		5 (12.5)
No. of household borrowing for agri-business	--	2 (5.00)	2 (5.00)	1 (2.5)	--	5 (12.5)
No. of household borrowing for growing flowers	--	--	--	--	--	--
Total	**1 (2.5)**	**11 (30.00)**	**18 (45.00)**	**9 (22.5)**	**1 (2.5)**	**40 (100)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages.

The table shows that only 1 household under the marginal category of farmer is borrowing for TRC. The small category of farmer consisted of 30.00% borrowers, mostly growing fruits (12.50%), growing vegetables (7.5%), agri-business (5.00%) and 2.5% for piggery and farm related activities. In Chedema village the semi medium Farmers constituted the highest number of household borrowers which is 45.0%. They are borrowing for the purpose of growing passion fruits (20.00%), 5.00% household for growing of vegetables, piggery (7.50%), agri-businesses (5.00%). About 22.5% of the household borrowers in Chedema village are medium farmers, with 12.5% of the household borrowers growing fruits, 2.5% growing vegetables and tree plantation 2.5%. There is only 1 large farmer household borrower (2.5%) for tree plantation. Therefore, it can be seen in the above two tables 5.5 and 5.6, that the semi-medium farmers and medium farmers are the maximum borrowing household in Chedema village and Kohima village respectively. Majority of the household borrowers are orchard farmers and are undertaking piggery and farm related project. The table 5.7 below shows the details activities of the household borrowers among the various categories of farmers in Phek village.

Table 5.7: Distribution of Farmer Borrowers among Different Categories in Phek Village under Phek District

Categories of Farmers	MF	SF	SMF	MF	LF	All
No. of household borrowing for Terrace Rice Cultivating	--	2 (4.16)	--	--	--	2 (4.16)
No. of household borrowing for Jhum field	--	--	1 (2.08)	--	--	1 (2.08)
No. of household borrowing for tree plantation	--	--	1 (2.08)	2 (4.16)	1 (2.08)	4 (8.33)
No. of household borrowing for Growing veg.	--	4 (8.33)	5 (10.41)	9 (22.91)	6 (12.5)	24 (50.0)
No. of household borrowing growing fruits	--		2 (4.16)	2 (4.16)	1 (2.08)	5 (10.41)
No. of household having Piggery and farm related	--	2 (4.16)	1 (2.08)	1 (2.08)	1 (2.08)	5 (10.41)
No. of household borrowing for agri- business	--	1 (2.08)	2 (4.16)	4 (8.33)	--	7 (14.58)
No. of household borrowing for growing flowers	--	--	--	--	--	--
Total	**--**	**9 (22.91)**	**12 (25.00)**	**18 (37.5)**	**9 (22.91)**	**48 (100)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The table indicates that no marginal farmer is found borrowing in Phek village. About 22.91% of the borrowing households are from small farmer category. They are borrowing mostly for growing of vegetables (8.33%), 4.16% each for TRC, piggery and 2.08% for agri-business. The semi medium farmer comprises of 25.00% household borrowers. They are borrowing for the purpose of growing vegetables 10.41%, 4.16% each for growing fruits, vegetables business, and 2.08% each for jhum, growing of vegetables and piggery. About 37.5% of the household borrowers are medium farmer and the majority of the borrowers under this category are cultivating marketable vegetables (22.91%), 8.33% for agro-based businesses, 4.16% each for tree plantation and growing fruits and 2.08% for piggery. The large farmer household borrowers consisted of 22.91%. These households are borrowing for growing of vegetables (12.5%), fruits (2.08%), rearing pigs (2.08%) and tree plantation (2.08%). Table 5.8 reflects on the details activities of the household borrowers among the various categories of farmers in Ketsapo village.

Table 5.8: Distribution of Farmer Borrowers among Different Categories in Ketsapo Village under Phek District

Categories of Farmers	MF	SF	SMF	MF	LF	All
No. of household borrowing for Terrace Rice Cultivating	--	1 (3.57)	-	-	-	1 (3.57)
No. of household borrowing for Jhum field	-	-	-	-	-	--
No. of household borrowing for tree plantation	-	-	-	1 (3.57)	-	1 (3.57)
No. of household borrowing for Growing veg.	-	-	2 (7.14)	3 (10.71)	2 (7.14)	7 (25.0)
No. of household borrowing growing fruits	-	-	1 (3.57)	1 (3.57)	1 (3.57)	3 (10.71)
No. of household having Piggery and farm related	-	1 (3.57)	1 (3.57)	3 (10.71)		5 (17.8)
No. of household borrowing for agro- business	-	2 (3.57)	3 (10.71)	5 (17.85)	1 (3.57)	11 (39.28)
No. of household borrowing for growing flowers	-	-	-	-	-	--
Total	-	**4 (14.28)**	**7 (25.00)**	**13 (46.42)**	**4 (14.28)**	**28 (100)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

Similarly, in Ketsapo village, no marginal farmer was found borrowing and about 14.28 % of the borrowing households are small farmers and only 1 household each had borrowed for TRC, piggery and 3.575% for agri-business. Semi medium farmers comprises of 25.00% household borrowers, and the major activity being the agri-business (10.71%), cultivation of marketable vegetables (7.14%), and 3.57% each growing fruits and piggery. The medium farmers comprises of 46.42% borrowing household. These household borrowers are mostly undertaking agri-business (17.85%), piggery (10.71%), growing of vegetables (10.71%), growing fruits (3.57%) and tree plantation (3.57%) respectively. Large farmers consist of 14.28 % of the household borrowers and 7.14 are growing vegetables, 3.57% each of the household is undertaking agri-business and growing fruits.

In analyzing table 5.7 and 5.8, none of the marginal farmer is borrowing in Phek District. Perhaps, in the rural areas of Phek District none of the farmer is borrowing for floriculture too. Piggery and growing of vegetable are a common activity for most of the household and they practice along with paddy cultivation. Perhaps tree plantation seems to be the activity of the large farmers, but not for the marginal farmers nor for small farmer. Though varieties of vegetables like yam, ginger etc. are grown in common, the new multi-medicinal plant ginseng is popular among the farmers of Phek District. As per spot observation, most of our farmers are small time borrowers and there is no large scale investment or activities taken up in any of the study villages.

5.3: Purpose of Borrowing among the Farming Households

The purpose of borrowing is an important determinant of loan prospective and its repayment condition. The decision of the farmer on how to invest the loan is as important as working on it. In the Indian scenario most of the non-repayment of loan arises due to investment for unproductive purposes in domestic expenditures, social merriment, repayment of old debts etc. In the survey it was found that most of the borrowers are KCC holder and cited 9 different activities for the purpose of borrowing. Though mostly for useful purpose, there is diversion of the loan for what is actually been recorded when check with the lending institution. This indicates that there are

alterations regarding the purpose of borrowing. The following are the responses of 137 household, the detail on the purpose of borrowing are reflected in table 5.9.

Table 5.9: Purpose of borrowing among the Farming Household in the study villages in Kohima District and Phek District

Purpose of borrowing	Kohima District			Phek District			All
	Kohima	Chedema	Total	Phek	Ketsapo	Total	
Irrigation	1 (4.76)	2 (5.00)	3 (4.91)	2 (4.16)	1 (3.57)	3 (3.94)	6 (4.37)
Extension of cultivatable land	1 (4.76)	--	1 (1.63)	2 (4.16)	--	2 (2.63)	3 (2.18)
seeds/ seedling (tree-plantation/fruits growers)	6 (28.57)	13 (32.5)	19 (31.14)	11 (22.91)	5 (17.85)	16 (21.05)	35 (25.54)
New cattle/piglet	4 (19.04)	5 (12.50)	9 (14.75)	8 (16.66)	5 (17.85)	13 (17.10)	22 (16.05)
Consumption expenses	3 (14.28)	5 (12.50)	8 (13.11)	5 (10.41)	6 (6.88)	11 (14.47)	19 (13.86)
Management cost (including travel expenses for sell of products to the market)	2 (9.52)	9 (22.5)	11 (18.03)	10 (20.83)	8 (28.57)	18 (23.68)	29 (21.16)
Labour wages	3 (14.28)	6 (15.0)	9 (14.75)	9 (18.75)	2 (7.14)	11 (14.47)	20 (14.59)
Machine/ equipment	--	--	--	1 (2.08)	1 (3.57)	2 (2.63)	2 (1.45)
Fertilizer/ Pesticides	1 (4.76)	--	1 (1.63)	--	--	--	1 (0.72)
Total	**21 (100)**	**40 (100)**	**61 (100)**	**48 (100)**	**28 (100)**	**76 (100)**	**137 (100)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The table indicates that most of the farmer borrowers are borrowing for seed/seedling, followed by management cost, new cattle, labors' wages, consumption expenditure and other irrigation and land extension etc. The table reveals that the purpose wise distribution differs in different villages in which about 4.37% of the household borrowers had spent the borrowed amount for irrigation purpose. Only 2.18% of the household had responded to buy paddy field /extension of cultivable land. Out of 137 household borrowers, 25.54% of the household borrowers had spent the borrowed amount for buying of new seeds/seedling (tree-plantation/fruits growers). About 15.32% of the household borrowers had responded for buying of new cattle/piglets or farm capitals for their farms (construction of cattle shed, sty or farm tools/equipment for animal). About 13.86% of the farmer had responded that they had utilized for consumption purposes. About 21.16% of the household borrower has responded for utilization of the loan for management cost including travel expenses for sell of agriculture products to the market. About 14.59% of the borrower had used the money as wages for labour. Only 1.45% of the borrowers used it for buying of equipment. Mechanization of the agriculture sector is still lacking Districts. Consumption expenditure on fertilizer and pesticide is still very negligible; about 0.72% of the borrower growing flowers in Kohima had borrowed for this purpose.

The table 5.10 shows the detail purposes of borrowing among the different categories of farming household. It can be seen that single marginal farmers had borrowed for renovation of irrigation for the paddy field. There are 28 small farmer borrowers which is 20.43% of the total household borrowers. Majority of the household under this category had utilized the borrowed amount as management cost (25.00%) for sell of their produce to the markets. Whereas, about 21.42% of the borrower had utilized it for buying of new seeds/seedling, 14.28% for consumption expenses, 10.71% for new cattle/piglets and labour wages, 7.14% for irrigation and extension of cultivable areas, 3.57% for fertilizers/pesticides. Among the SMF about 43 households which is of 31.38% of household borrowers, they had utilized for buying new seeds/seedling (27.90%), about 20.93% of the household borrowers had utilized it for buying new cattle/piglet and management cost of small agriculture business, 13.95% as consumption expenses, 9.30% for labor wages, and 2.32% of the household borrowers for machine/equipment, irrigation, and buying plot of land for cultivation.

Table 5.10: Purpose of Borrowing among Different Categories of Farmers in Kohima District and Phek District

Purpose of borrowing	MF	SF	SMF	MF	LF	TOTAL
Irrigation	1 (100)	2 (7.14)	1 (2.32)	1 (2.00)	1 (6.66)	6 (4.37)
Extension of cultivatable land	--	2 (7.14)	1 (2.32)	--	--	3 (2.18)
Seeds/ seedling (tree-plantation/fruits & flower growers)	--	6 (21.42)	12 (27.90)	11 (22.0)	6 (40.0)	35 (25.54)
Cattle/piglet/ farm related	--	3 (10.71)	9 (20.93)	8 (16.0)	2 (13.33)	22 (16.05)
Consumption expenses	--	4 (14.28)	6 (13.95)	9 (18.0)	--	19 (13.86)
Management cost including travel expenses for sell of agriculture products to the market	--	7 (25.00)	9 (20.93)	10 (20.0)	3 (20.0)	29 (21.16)
Labour wages	--	3 (10.71)	4 (9.30)	10 (20.0))	3 (20.0)	20 (14.59)
Machine/equipment	--	--	1 (2.32)	1 (2.00)	--	2 (1.45)
Fertilizer/Pesticides	--	1 (3.57)	--	--	--	1 (0.72)
Total	**1 (100)**	**28 (100)**	**43 (100)**	**50 (100)**	**15 (100)**	**137 (100)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The medium farmer category consist of 47 household borrowers (34.30%), and about 21.27% of the household had spent the borrowed amount as labour wages and for buying seeds/seedling for plantation (21.27%), 19.14% of the household had borrowed to manage their travel expense for sell of agriculture produces in the market and consumption expenses (19.14%), about 14.89% of the household had borrowed for farm related activities and 2.12% each for construction of irrigation facilities, machines and equipment. Among the large farmer category 33.33% of them had borrowed for new seeds/seedling, 27.77% for labour wages, 22.22% for management cost, 11.11% of the large farmer had borrowed for cattle rearing and farm related activities and 5.55%

irrigation purpose. Table 5.11 indicates the purpose of borrowing among the different categories of farmer in Kohima District. Only 1 household under the marginal farmer category had borrowed for the construction of irrigations.

Table 5.11: Purpose of Borrowing among Different Categories of Farmers in Kohima District

Purpose of borrowing	Total (Kohima Village & Chedema Village)					
	MF	**SF**	**SMF**	**MF**	**LF**	**TOTAL**
Irrigation	1 (100)	1 (6.66)	--	--	1 (50.0)	3 (4.91)
Extension of cultivatable land	--	--	1 (4.16)	--	--	1 (1.63)
Seeds/ seedling (tree-plantation/fruits & flower growers)	--	3 (20.00)	10 (41.66)	5 (26.31)	1 (50.0)	19 (31.14)
Farm related Capitals (cattle/piglets)	--	3 (20.00)	3 (12.5)	3 (18.75)	--	9 (14.75)
Consumption expenses	--	2 (13.33)	3 (12.5)	3 (18.75)	--	8 (13.11)
Management cost (including travel expenses for sell of agriculture products to the market)	--	3 (20.00)	3 (12.5)	5 (26.31)	--	11 (18.03)
Labour wages	--	2 (13.33)	4 (16.66)	3 (18.75)	--	9 (14.75)
Machine/equipment	--	--	--	--	--	--
Fertilizer/Pesticides	--	1 (6.66)	--	--	--	1 (1.63)
Total	**1 (100)**	**15 (100)**	**24 (100)**	**19 (100)**	**2 (100)**	**61 (100)**

Source : Field survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The table indicates that under the small farmer category in Kohima District, 20.00% each had borrowed for management cost including travel expenses for sell of agriculture products to the market, buying new seeds/seedling (tree-plantation/fruits & flower growers) and farm capital, 13.33%, labour wages and consumption expenses.6.66% of the household had used it for irrigation purpose and fertilizers/ pesticides. Among the semi marginal farmers (comprising of 24 household borrowers)

41.66% had borrowed for buying new seeds/seedling (tree-plantation/fruits & flower growers), 16.66% for farms and labor's wages, 12.5% for consumption, management and farm related capital and 4.16% for extension of cultivable plots. Under the medium farmer category, 26.31% of the household had borrowed for buying new seeds/seedling, and for management cost for sell of agriculture products, 18.75% each for consumption purposes and labor wages and farm related activities. Whereas, about 50.0% of large farmer borrowers had borrowed for irrigation and 50.0% for new seeds/seedling. On the other hand, the purpose of borrowing in Phek district under different farm size group is shown in table 5.12.

Table 5.12: Purpose of Borrowing among Different Categories of Farmers in Phek District

Purpose of borrowing	Total (Phek Village & Ketsapo Village)					
	MF	**SF**	**SMF**	**MF**	**LF**	**TOTAL**
Irrigation	--	1 (7.69)	1 (5.26)	1 (3.22)	--	3 (3.94)
Extension of cultivatable land	--	1 (7.69)	1 (5.26)	--	--	2 (2.63)
Seeds/ seedling (tree-plantation/fruits & flower growers)	--	2 (15.38)	3 (15.78)	6 (19.35)	5 (38.46)	16 (21.05)
Buying new cattle/piglet	--	3 (23.07)	3 (15.78)	5 (16.12)	2 (15.38)	13 (17.10)
Consumption expenses	--	2 (15.38)	3 (15.78)	6 (19.35)	--	11 (14.47)
Management cost (including travel expenses for sell of agriculture products to the market)	--	2 (15.38)	6 (31.57)	7 (22.58)	3 (23.07)	18 (23.68)
Labour wages	--	2 (15.38)	1 (5.26)	5 (16.12)	3 (23.07	11 (14.47)
Machine/equipment	--	--	1 (5.26)	1 (3.22)	--	2 (2.63)
Fertilizer/Pesticides	--	--	--	--	--	--
Total	--	**13 (100)**	**19 (100)**	**31 (100)**	**13 (100)**	**76 (100)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

Similarly, the data indicates that in Phek District majority of the farmer borrower access loans for management cost i.e. for transportation and selling of their surplus commodities in nearby markets, followed by seed/seedling/ fruits and flower cultivator. Credit investment for purchase of new cattle, paying labors' wages and consumption expenses is in significant level than spending on irrigation, purchase of machines or land extension. Among the farm size group, small farmers concentrate almost equal number in major activities than their counter-part in both the study villages. The semi-medium farmers, as well as medium farmers concentrate more on management cost at 31.57% and 22.58% respectively, followed by consumption expenditure, buying new cattle/piggery, seeds/seedling/fruits and flower growers than other purpose. However, from the large farmer category, the farmer borrowers are spending their credit more on seed/seedling/fruits and flower growers and followed by labor's wages and other management cost. The data indicates that the distribution of credit under different farmer size groups differs on the basis of their purpose and credit accessibility.

It can be seen from the table that none of the marginal farmers are borrowing in Phek District. Among the small farmer 23.07% had borrowed for rearing cattle/piglet, about 15.38% of the households are borrowing for management cost for sell of agriculture products in the market, labour wage(15.38%), consumption expenses(15.38%) and 7.69% each for irrigation and extension of cultivable land. Among the semi medium farmer too, 31.57% had borrowed for management of agriculture businesses and 15.78 % for buying seeds/seedling, farm related activities and consumption expenses. In the medium farmer category also more household had utilized the borrowed amount for management of agriculture businesses which comprises of 22.58%, while 19.35% of them for consumption purpose, buying of seeds/seedling (19.35%), farm related activities (16.12%), labor's wages (16.12%) and 33.22% for irrigation. The large farmer comprising of 38.46% had utilized the borrowed amount for buying new seeds/ seedling for plantation and 23.07% each for labor wages and management cost for sell of agricultural products in the market, 15.38% for farm activities such as buying new pigs/piglets.

5.4: Transaction Cost and Rate of Interest

The productiveness of loan also depend on the amount of transaction cost involves. Transaction cost includes the number of days the borrowers took to avail the loan which implies the wage losses, the money spent in each trip from the stage of collecting the application forms, filling up of details, the necessary document to enclose etc., till the date of drawing the desired amount. When asked about the number of days involves in getting the loan the bank official replies that it takes a maximum of 3- 4 days. However, from the borrowers' point of view, the answer varies from at least a week or two or even upto a month. The State Bank of India (SBI)-main branch Kohima has assigned different Banks for the service of agriculture lending to different villages. In Kohima village the farmer are accessing institutional credit from Central Bank of India (CBI) which is ½ km from the village and State Bank of India (SBI)-Chedema Branch which is located within Kohima village and 7 km away from Chedema village.

Phek village and Ketsapo village are accessing institutional credit from the 2 operating Banks i.e. the SBI and NSCB in the District headquarter which are 7 km away from Phek Village and 9 km away from Ketsapo village. On an average the farmers of the study villages has to travel a distance of $5^{1/2}$ Kms at an approximate expense of Rs 50 for the travel. If the average number of trip each borrowers has to take for getting the loan is 2 to 7 days, the total cost will be the sum of travel expenses, the amount spend for refreshment and the wage lost i.e. Rs 50 vehicle fare + Rs 30 (refreshment) + Rs 250 wage rate×7 days which will be equal to Rs 660 to Rs 2310 approximately. Of these four assigned banking institutions for the selected study villages, the rate of interest under SBI is 7% per annum for agricultural crop or KCC, since 2005 till 2015, 12.50% for tree plantation in 2005 and it was increased to 13.75% and 11.95% at the time of survey till 2015. For agriculture and allied activities such as cattle /piggery, it was 12.50% till 2005 and to 13.75% to 11.95% in 2015. The NSCB charges 7% rate of interest for all agriculture activities under KCC, since 2005 to 2014. It now charges 9% rate of interest. And 6% rate of interest for co-operative societies. The rate of interest for Medium term loan such as for piggery was 12% till 2013 and the present rate at 13% in 2015 respectively.

5.5: Impact of Agriculture Credit

RV Gupta Committee stated that the main objective of rural credit policy is "to achieve anticipated growth in agricultural production and employment[102]. The quantity of capital requirement to be invested in achieving the desire rate of growth is estimated by capital output ratio, which is defined as the ratio of capital stock to the total output at a given time, given the rate of growth of an economy. Studies found that both direct and indirect agricultural credit has positive impact on agriculture output; however, direct credit has immediate effect and indirect credit with a year lag[103] (Das, Abhiman et al. 2009). In the analysis of the study, 100% of the borrowers here are referring to direct institutional credit borrowings. They get loan as and when needed and utilized the borrowed amount for whatever purpose they want to take-up. Infact, it is found that farmers are borrowing for purposeful uses though most of our farmers are borrowing minor amount ranging between Rs 5,000 - Rs 70,000, which is too meager to take up big investment activities. The loan sanctioned for agriculture and allied activities are up to Rs 8, 00,000. About 67% of the farmers are borrowing within the range of Rs 15,000 to Rs 45,000, and 29% of the household are borrowing in between Rs 50000 to Rs 90,000 and only 4% of the farmers mostly rich farmers are borrowing up to Rs 1, 00,000 to Rs 8, 00,000 for agriculture and allied activities. About 11% of the household are borrowing for more than one time after repayment under Kissan Credit Card (KCC). The impact of which is manifested through the following indicators.

5.5. i: Impact of Credit on the Level of Income and Output

Credit helps marginal and small farmer not only for survival, but enhances income. In the table 5.13, it indicates the total income and output generated by the borrowing households in Kohima and Phek District.

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[102]. Dasgupta ,R (2001), *"Rural banking and credit; a tale of many committee"*. Economic and Political Weekly, Vol. 36, No. 9 (Mar. 3-9, 2001), pp. 733-737

[103]. Das, Abhiman; Senapati, Manjusha and John, Joice (2009), "Impact of Agricultural Credit on Agricultural Production: An Empirical Analysis in India". *Reserve Bank of India Occasional Paper*, Vol.30, No.2, Monsoon 2009.

Terrace Rice Cultivation: Terrace rice cultivating farmer comprises of 2.91% of the total household borrowers with 3.01% share of the total amount borrowed. It has a profit margin of 11.49%.

Jhum Cultivation: Only 0.72% of the household had borrowed for jhum cultivation with 0.35% share of the total amount borrowed earning a profit margin of 7.00%.

Tree plantation: Household borrowers for tree plantation comprises of 8.02% and has a share of 6.59% of the total amount borrowed. However, borrowing for tree plantation gives a negative impact because it takes several years for a tree to mature for utilization. These household borrowing for tree plantation purpose had avail the loan during 2009-2013, though most of them have great expectation for the future harvest, yet it has a negative profit margin of -26.32 % in the current period.

Vegetable growers: It can be seen that the largest number of borrowing household are those vegetable growers consisting of 29.19% out of the total 137 household borrowers, but the share of the amount borrowed is only 15.56% which means that most of these borrowers are borrowing little amount and their profit margin is also low at 23.26%. These groups of farmer are mostly Small Farmer and Medium Farmer and they shows a promising future if adequate facilities are provided.

Fruits growers: Fruit growers comprise of 20.43% of the household borrowers and has about 33.86% share of the total amount borrowed. They earned a profit margin of 15.45%.

Piggery and farm related activities: The household borrower for piggery and farm related activities are 15.32% with 18.43% share of the total amount borrowed, but earns the highest rate profit margin up to 50.77%.

Agri-business: Those vegetable vendors or for agri-business comprises of 19.70% of the total household borrower. This household borrower has a share of 20.56% amount of borrowing which fetch a profit margin of 38.66%.

Floriculture: Floriculture is becoming a blooming business especially in the urban areas of Kohima District with 3.64% of household borrowers and total share of 1.59% amount borrowed, but with 13.33% profit margin within a couple of year or two. The

borrowing household expressed a positive aspect of the activity, though most of them are in their trial stages to do something useful out of hobby in their free time. As per spot observation, they are on expansion phase.

Table 5.13: Impact of Credit on the Level of Income and Output in Kohima and Phek Districts

Purpose of borrowing	Total income generated by borrowing household from Kohima and Phek Districts				
	Total no of household	Total amount borrowed	Total income /output (approx.)	profit margin	Net profit
No. of household borrowing for Terrace Rice Cultivating	4 (2.91)	85000 (3.01)	94770 (2.76)	9770 (1.61)	11.49
No. of household borrowing for Jhum field	1 (0.72)	10000 (0.35)	10700 (0.31)	700 (0.11)	7.00
No. of household borrowing for tree plantation	11 (8.02)	186000 (6.59)	137000 (3.99)	-49000 (-8.09)	-26.34
No. of household borrowing for Growing veg.	40 (29.19)	439000 (15.56)	541100 (15.79)	102100 (16.86)	23.26
No. of household borrowing growing fruits	28 (20.43)	955000 (33.86)	1102500 (32.18)	147500 (24.36)	15.45
No. of household borrowing Piggery and farm related	21 (15.32)	520000 (18.43)	784000 (22.88)	264000 (43.61)	50.77
No. of household borrowing for agro-business	27 (19.70)	580000 (20.56)	804240 (23.47)	224240 (37.04)	38.66
No. of household borrowing for growing flowers	5 (3.64)	45000 (1.59)	51000 (1.48)	6000 (0.99)	13.33
Total	**137 (100)**	**2820000 (100)**	**3425310 (100)**	**605310 (100)**	**21.46**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The urban areas have the advantage of not only accessing the credit facilities but have the plus point of disposing their agriculture product in the market for an appropriate price. In Kohima village, farmers are adapting to new methods of agriculture cultivation and investing more of their time and money to marketable products. It was observed that few families had given up TRC and jhum cultivation for growing vegetable, fruits and cattle related farm. One farmer expressed "rice is the cheapest commodity and cultivating rice is no more profitable as a kilo of rice cost Rs 35-40, whereas a single papaya cost at least Rs 80 to Rs 120". Detail activities and total income and output generated by the household borrowers in Kohima village are given in table 5.14 below: -

Table 5.14: Impact of Credit on the Level of Income and Output in Kohima Village

Purpose of borrowing	**Total no. of household**	**Total amount borrowed**	**Total income/ output (approx.)**	**Profit margin**	**Total Net Profit**
No. of household borrowing for Terrace Rice Cultivating	--	--	--	--	--
No. of household borrowing for Jhum field	--	--	--	--	--
No. of household borrowing for tree plantation	2 (9.52)	55000 (12.79)	57000 (9.74)	2000 (1.29)	3.64
No. of household borrowing for Growing veg.	2 (9.52)	45000 (10.46)	61000 (10.42)	16000 (10.32)	35.56
No. of household borrowing growing fruits	2 (9.52)	--	--	--	--
No. of household having Piggery and farm related	6 (28.57)	210000 (48.83)	320000 (54.70)	110000 (70.96)	52.38
No. of household borrowing for agri- business	4 (19.04)	75000 (17.44)	96000 (16.41)	21000 (13.54)	28.00
No. of household borrowing for growing flowers	5 (23.80)	45000 (10.46)	51000 (8.71)	6000 (3.87)	13.33
Total	**21 (100)**	**430000 (100)**	**585000 (100)**	**155000 (100)**	**36.05**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

In Kohima village none of the farmer had borrowed for TRC/WTC as well as jhum. About 9.52% of the household are borrowing for tree plantation and their share of borrowed amount comprises of 11.45% to total amount borrowed in the village which fetch a profit margin of 3.64%. Similarly, in Kohima village about 9.52% of the household borrowers are vegetable growers and it consisted of 9.37% share of the total amount borrowed, it has the net profit of 35.56%. Whereas, for Piggery and farm related activities large number of household had borrowed and their total share of borrowed amount comprises of 43.75% and has Net profit of 52.38%. However, for agri-businesses their share of borrowed amount comprises of 15.62% to total amount borrowed. They earned Net profit of 28.00%. While 23% of the borrowing household are growing flowers and their share of borrowed amount comprises of 9.37% only, but yields an outcome of 13.33%.

Table 5.15 indicates the detail of Chedema village on the impact of institutional credit on the level of income and output. In Chedema village the household borrower for TRC is only 2.50% out of the total 40 household. The share of total amount borrowed is 2.62% and indicated a profit margin of 7.50%. The household borrowers for tree plantation has its share of 5.24% of the total amount borrowed and indicate no profit at the time of survey. In Chedema village the borrowers' share was 18.36% of the total amount borrowed and yields a Net profit of 17.86%. The fruit grower comprises of 55.08% of the total amount borrowed and has an outcome indicator of 15.48% Net profit. For piggery and cattle farm related activities comprises of 8.19% of the total amount borrowed and has a Net profit margin of 54.40%. The share of Agro-business farmer borrowers amounts to 10.49% of the total borrowing and they earn an approximate Net profit of 35.94%.

Table 5.15: Impact of Credit on the Level of Income and Output in Chedema Village

Purpose of borrowing	Total no of household	Total amount borrowed	Total income/ Output (approx.)	Profit margin	Total Net Profit
No. of household borrowing for Terrace Rice Cultivating	1 (2.50)	40000 (2.62)	43000 (2.34)	3000 (0.97)	7.50
No. of household borrowing for Jhum field	--	--	--	--	--
No. of household borrowing for tree plantation	4 (10.00)	80000 (5.24)	80000 (4.36)	--	--
No. of household borrowing for Growing veg.	7 (17.50)	280000 (18.36)	330000 (17.99)	50000 (16.20)	17.86
No. of household borrowing growing fruits	18 (45.00)	840000 (55.08)	970000 (52.90)	130000 (42.13)	15.48
No. of household having Piggery and farm related	5 (12.50)	125000 (8.19)	193000 (10.521)	68000 (22.04)	54.40
No. of household borrowing for agri- business	5 (12.50)	160000 (10.49)	217500 (11.86)	57500 (18.63)	35.94
No. of household borrowing for growing flowers	--	--	--	--	--
Total	**40 (100)**	**1525000 (100)**	**1833500 (100)**	**308500 (100)**	**20.23**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

Similarly, the detail activity-wise on the impact of institutional credit on the level of income and output in Phek village is shown in the table 5.16. The table indicates that, out of the total 48 household borrowers in Phek village about 4.16% are borrowing for TRC, and has its share of 7.29% of the borrowed amount. It indicated a Net profit of 8%. While for Jhum cultivators, the Net profit margin was 7.00%. Similarly, about 18.24% of the borrowed amount is owned by those tree plantation farmers, but yields no income so far. A large number of small farmers are borrowing for growing of vegetable i.e., making good profit of 42.1% out of the total share of 8.75% of the borrowed

amount. Orchard farmer has 18.24% share of the total amount borrowed and earn a profit margin of 22.40% approximately in a year.

Table 5.16: Impact of Credit on the Level of Income and Output in Phek Village

Purpose of borrowing	**Total no. of household**	**Total amount borrowed**	**Total income /output**	**Profit Margin**	**Total Net Profit**
No. of household borrowing for Terrace Rice Cultivating	2 (4.16)	20000 (7.29)	22770 (7.47)	2770 (3.42)	13.9
No. of household borrowing for Jhum field	1 (2.08)	10000 (3.64)	10700 (3.51)	700 (0.86)	7.0
No. of household borrowing for tree plantation	4 (8.33)	50000 (18.24)	--	--	--
No. of household borrowing for Growing veg.	24 (50.00)	24000 (8.75)	34100 (11.18)	10100 (12.50)	42.1
No. of household borrowing growing fruits	5 (10.41)	50000 (18.24)	61200 (20.08)	11200 (13.86)	22.4
No. of household having Piggery and farm related	5 (10.41)	50000 (18.24)	75000 (24.60)	25000 (30.95)	50.0
No. of household borrowing for agri- business	7 (14.58)	70000 (25.54)	101000 (33.13)	31000 (38.38)	44.3
No. of household borrowing for growing flowers	--	--	--	--	--
Total	**48 (100)**	**274000 (100)**	**304770 (100)**	**80770 (100)**	**29.5**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The detail activity-wise on the impact of institutional credit on the level of income and output in Ketsapo village of Phek District is shown in the table 5.17. The total share of TRC borrowing household to total amount borrowed in the village is only 4.23% and has reflected an increase in Net profit of 8.00% annually. Vegetable grower's share of borrowing to total borrowing is 15.22% and they earn approximately Net profit of 28.89% in a year. The **s**hare of fruit growers to total borrowing is 10.99% with the Net profit margin of 9.69% respectively. Household borrowers share to total borrowing is 22.84%. They earn a Net profit margin of 45.19% in a year. This group of

borrower has their share of 46.53% borrowing to total borrowing which fetch them an approximate Net profit of 41.72% annually.

Therefore, in Phek District the most profitable activity that is seen in the two villages of Phek and Ketsapo are piggery and farm related activities which earns an approximate profit of 50% and 45.19% respectively. The Chakhesang Public Organization (CPO) in collaboration with other apex Chakhesang bodies had restricted the supply of swine product in the region which has encouraged the local people to invest more in these activities. Besides, the region is endowed with rich natural flora proved to boost up piggery and cattle farm. The natural fertility of the land blend with the perfect climatic conditions is the balancing factor for high production of fruits and other agricultural products without the application of any fertilizers.

Table 5.17: Impact of credit on the Level of Income and Output in Ketsapo Village

Purpose of borrowing	**Total no of household**	**Total amount borrowed**	**Total income /output**	**profit margin**	**Total Net profit**
No. of household borrowing for Terrace Rice Cultivating	1 (3.57)	25000 (4.23)	27000 (3.37)	2000 (0.95)	8
No. of household borrowing for Jhum field	--	--	--	--	--
No. of household borrowing for tree plantation	1 (3.57)	1000 (0.16)	--	--	--
No. of household borrowing for Growing veg.	7 (25.00)	90000 (15.22)	116000 (14.49)	26000 (12.37)	28.89
No. of household borrowing growing fruits	3 (10.71)	65000 (10.99)	71300 (8.91)	6300 (2.99)	9.69
No. of household having Piggery and farm related	5 (17.85)	135000 (22.84)	196000 (24.49)	61000 (29.04)	45.19
No. of household borrowing for Agri.-business	11 (39.28)	275000 (46.53)	389740 (48.71)	114740 (54.62)	41.72
No. of household borrowing for growing flowers	--	--	--	--	--
Total	**28 (100)**	**591000 (100)**	**800040 (100)**	**210040 (100)**	**35.54**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

5.5. ii: Impact of Credit on the Level of Employment Generation

Undoubtedly, a farmer is not able to make maximum use of his time, labour and productive capacity of his land because of inadequate finances. For instance, a farmer practicing terrace field cultivation, the transplantation season starts from May to August and are the busiest months. It is generally the women folk who look into and take care of the miniature activity thereafter. With the rising rate of urbanization and township, the demand for agriculture product is also increasing at an immense rate every year. Taking advantage of the increasing demand situation, the rural farmers are grabbing the opportunity by resorting to more marketable agriculture products. By involving in such practices it requires not only land and labour but capital which is possible through financial support from institutions. About 93% of the borrower responded that practicing multi-cropping and mixed cropping kept them occupied throughout the year.

Below are the responses of the borrowing household on the changing trend of working days in agriculture and allied activities as shown in the table 5.18. The no. of days employed has increased tremendously for all activities except terrace and jhum farmers, it was observed that many farmers are minimizing the working days in paddy field for other activities like gardening and rearing of domestic animals and cattle. Gone are the days when our farmers gave very little time and attention for the cultivation of fruits and vegetables, these are grown alongside of the paddy fields, 90% of the vegetable vendors borrowing for their activity expressed contentment for their daily activity. However, they expressed that due to the problems of storage facilities and transportation many of their produce get damage before it reaches the market and suffer loses. They feel that the government should see into these matters as it requires huge amount for them to bear. The borrowing households for tree plantation are usually from the big farmers, if not from medium class category of farmers. They are skeptical about the profitability, they feel that the highly profess government policies are needless in term of its profitability when taken into account the real cost involve in transaction cost and the duration they have to wait does not suffice to the urgency of time. With borrowing, the average no. of working days for growing of vegetables has increased to 21 days in a year in Kohima village, which is 75.0% increase in the no. of working days as it was only 12 days before assessing financial assistance from the institution. While the no. of working days in terrace field has gone negative, the no of working days for all

other activities has increased beyond expectation. Reason such that activities which are neglected prior to the realization of its market values are revived after borrowing from the institutions. In Nagaland trees are grown wild, there was hardly any farmer or family who gave time and money to take care of the forest resource, but with the change of time, it is seen as an industrious investment. Pig and flower rearing are activities which occupies not even an hour of the day, now with increasing market demand, people are giving due importance from hobbies to full time occupation. In Kohima District, farmers are investing more of their time in piggery and farm related activities, growing of fruits such as oranges, banana and planting trees as reflected in the table 5.18. Agriculture activities which was once neglected among the Kohima villagers is now a revived activity not confined with the old methods of paddy cultivation alone, but with new methods of more marketable products.

Table 5.18: Impact of Credit on the Level Employment Generation in Kohima District

Purpose of borrowing	**Total no of household**	**Average no. of working days in a year(before**	**Average no. of working days in a year (after borrowing)**	**No. of working days increased**	**% increased in the working day after**
No. of household borrowing for Terrace Rice Cultivating	1	62	60	-2	-3.2
No. of household borrowing for Jhum field	--	--	--	--	--
No. of household borrowing for tree plantation	6	2	3	1	50.00
No. of household borrowing for Growing veg.	9	12	21	9	75.0
No. of household borrowing growing fruits	20	36	63	27	75.00
No. of household having Piggery and farm related	11	90	106	16	17.8
No. of household borrowing for Agri.-business	9	31	58	27	87.09
No. of household borrowing for growing flowers	5	17	30	13	76.47
Total	**61**	**250**	**341**	**91**	**36.4**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

Whereas, in Phek District, every household have piggery, farmers look after their pigs as a free time activity. They said for five pigs, at least an hour of work a day is enough to keep them. Therefore, as per table above the calculations are based on the fact that one hour of labor a day for 365 days a year which comes to 15 days a year. Most of the farmers are small time borrowers keeping at the most up to 6 pigs in a year. In Phek, agriculture and allied activities are practice more consistently, though with borrowing it has generated the no. of working days to 87 days a year among the household borrowers, which is 29.29% increase in the no. of working days as shown in table 5.19.

Table 5.19: Impact of Credit on the Level of Employment Generation in Phek District

Purpose of borrowing	Total no of household borrowers	Approx. no. of working days in a year(before borrowing)	Approx. no. of working days in a year(after borrowing)	No. of working days increased	% increased in the working day after borrowing
No. of household borrowing for Terrace Rice Cultivating	3	90	92	2	2.22
No. of household borrowing for Jhum field	1	66	67	1	1.52
No. of household borrowing for tree plantation	5	2	2	--	--
No. of household borrowing for Growing veg.	31	38	64	26	68.42
No. of household borrowing for growing fruits	8	19	37	18	94.74
No. of household having Piggery and farm related	10	30	36	6	20.00
No. of household borrowing for Agri.-business	18	52	86	34	65.38
No. of household borrowing for growing flowers	--	--	--	--	--
Total	76	297	384	87	29.29

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

In Phek District, majority of the farmers are working more growing of vegetables, in orchard and engaging in rearing of pigs and farm activities than others. It was also observed that with the help of such activities the farmers are able to finance their children's education and help manage the household chore especially for paddy

cultivation. The level of income and output in relation to the no. of days employed is not at all proportionate nor corresponding, reasons may be such that since most of our farmers are illiterate there is no record on the level of income generated in relation the no. of days engaged in a particular activity. Most of the reports are based on approximate calculation though efforts are given to obtain the exact figure for specific activities.

5.5. iii: Impact of Agricultural Credit on Other Aspect

Although about 55% of the farmers borrowers are motivated by credit accessibility from the institutional sources to take up new methods of agriculture cultivation, there is no doubt that all the agriculture credit has consciously or unconsciously help the farming community to take up new methods of cultivation. In fact, this is observed through the types of agricultural practices they undertook with the borrowed money, rather than stick to the old traditional methods of paddy cultivation. Only 3% among the marginal category and 1% of small farmer had borrowed for cultivation of terrace cultivation. It is important to note that most of those farming household who are cultivating enough rice for consumption are willing to take up new methods of cultivation. This interesting transition is seen in the fact that about 75% of the households are adapting to market crop diversification practice to earn more income, while 46% of the farmers borrowers are motivated to concentrate to grow vegetable for their agri-business. Burgess and Pande (2002)[104] have rightly said that the expansion of banking services to unbanked areas has contributed to the growth of small business sector. In the survey, none of the farmer in Phek District was found borrowing for fertilizer consumption and only 2 farmers had borrowed for purchase of machine in the selected villages. Perhaps, it was found that because, the uses of modern machine are not very convenient in hilly terrace benches. Similarly, in rural villages natural manures are available in plenty. Farmers use husks, ashes of burnt twig/grass and animal dung. In dry terrace field the Rabi crops like beans, tomato and other plants are decomposed after harvest, which are excellent manure.

[104]. Burgass, Robin and Pande, Rohini (2002), "Do Rural Banks Matter? Evidence from the Indian Social Experiment". *American Journal of Economic Review*. Vol. 95, No.3, pp.780-795.

In closer urban settlement like Kohima villages, manures are of high market value. The cattle dung is in high demand and there are families with cattle farms are doing good business out of it, but there is no farming household borrowing for buying of manure for cultivation. In table 5.20, the borrowing household for TRC and Jhum cultivation, expressed their full (100%) satisfaction in regard to borrowing and their desire to take up agriculture and allied activities

Table 5.20: Impact of Credit on Other Aspect (Kohima and Phek Districts)

Purpose of borrowing	Total no. of household	
	House Holds	Motivated by institutional borrowing
No. of household borrowing for Terrace Rice Cultivating	4 (2.9)	4 (100)
No. of household borrowing for Jhum field	1 (0.72)	1 (100)
No. of household borrowing for tree plantation	11 (8.02)	4 (40.00)
No. of household borrowing for Growing veg.	40 (29.19)	30 (75.00)
No. of household borrowing growing fruits	28 (20.43)	6 (20.69)
No. of household having Piggery and farm related activities	21 (15.32)	18 (81.82)
No. of household borrowing for Agri.-business	27 (19.70)	12 (46.15)
No. of household borrowing for growing flowers	5 (3.64)	1 (20)
Total	**137 (100)**	**76 (55.47)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

Only 40% of the borrowing household gave a positive response for tree plantation and 20% for growing fruits. Those 82% of the borrowing household for piggery and farm related activities wants to borrow more in the future for the similar purpose. About 20% of the borrowing household for floriculture are motivated by borrowing and wants to take up other agriculture and allied activities.

In Kohima District, only one household was borrowing for TRC and the wants to borrow for other agriculture and allied activities too. None of the borrowing household for tree plantations in the District wants to borrow again for agriculture and allied

activities. Similarly in Kohima District, about 46.15% of the farmer borrowers had responded on the extension/expanding of their agriculture and allied activities. Through available credit the respondent has more concern to take more interest to promote their livelihood.

About 75% of the vegetable growers are motivated by borrowing and wants to take up more credit for same purpose in the future. Orchard farmer of Kohima District, are mostly well established and are satisfied with their present activity, and wants no other agricultural activity. They however expressed that the government provide assistance for their product during peak harvest season in time of nature calamities. About 50.00% out of the total borrowers are motivated to take loan to expand piggery farm and other agriculture and allied activities for improving their economic condition since it is profitable.

Table 5.21: Impact of Credit on Other Aspect in Kohima District

Purpose of borrowing	District: KOHIMA	
	House Holds	**Motivated by institutional borrowing**
No. of household borrowing for Terrace Rice Cultivating	1 (1.63)	1 (100)
No. of household borrowing for Jhum field	--	--
No. of household borrowing for tree plantation	6 (9.83)	--
No. of household borrowing for Growing veg.	9 (14.75)	5 (55.6)
No. of household borrowing growing fruits	20 (32.78)	10 (50.00)
No. of household having Piggery and farm related	11 (18.03)	8 (66.7)
No. of household borrowing for Agri.-business	9 (14.75)	3 (33.33)
No. of household borrowing for growing flowers	5 (8.19)	1 (20.0)
All	**61 (100)**	**28 (45.90)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

In contrary to that majority of the farmer borrowers in Phek District responded on the credit availability and motivated to expansion of other activity is shown in table 5.22. The table indicates that about 76.23% of the borrowing household are motivated by institutional borrowing and wanted for agriculture and allied activities too. 100% of the household borrowings for piggery are encouraged and 80% of the borrowing households for tree plantation are satisfied for the loan to expand their agriculture and allied activities. About 81% of the borrowers from vegetable growers are motivated to take up expanding agriculture and allied activities. For household growing of fruits 75% of them are motivated to take up more of agriculture and allied activities mostly to set up small outlets for exposing out of their products in the market.

Table 5.22: Impact of Credit on Other Aspect in Phek District

Purpose of borrowing	**District: PHEK**	
	House Holds	**Motivated by institutional borrowing**
No. of household borrowing for Terrace Rice Cultivating	3 (3.94)	3 (100)
No. of household borrowing for Jhum field	1 (1.31)	1 (100)
No. of household borrowing for tree plantation	5 (6.57)	4 (80)
No. of household borrowing for Growing veg.	31 (40.78)	25 (80.65)
No. of household borrowing growing fruits	8 (10.52)	6 (75)
No. of household having Piggery and farm related	10 (13.15)	10 (100)
No. of household borrowing for Agri.-business	18 (23.68)	9 (50)
No. of household borrowing for growing flowers	--	--
Total	**76 (100)**	**58 (76.32)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The analysis reveals that the credit delivery to agriculture has different impact across different region and to different categories of farmers and even to different types of agriculture and allied activity. An increased in the supply of credit to agriculture

alone is not a necessary tool for the growth of agriculture; it depends on how wise a farmer invests out of it. During 2006-07, agricultural production has decelerated, the per capita annual production gradually decline exerting persisting pressure on demand and supply gaps, in spite of an increase in supply of credit from Rs. 8,255 crores in 1994-95 to Rs. 1, 22,443 crores in 2006-07. Agriculture output is a dependent variable depending on regressor such as the total outstanding agriculture accounts, credit, and total agriculture areas and rainfall. Certain loopholes are pointed such as the inadequate provision of credit to small and marginal farmers, paucity of medium and long term lending of the institutions, limited deposit mobilization and heavy dependence on borrowed fund from the borrowers side contributes to the low productivity of agriculture. Several groups of scholar suggested for greater inclusion of private, public and micro-credit supplier through self-group and also region specific market participations. There is very little evidence that the revival of agriculture credit during the 2000s has benefited the small and marginal farmers. (Ramakumar, R et al. 2007)[105].

5.6: Distributional Challenges of Agriculture Credit

All India credit survey observed: "agricultural credit is a problem when it cannot be obtained; it is also a problem when it can be had but in such a form that on the whole it does more harm than good. It may be said that, in India, it is thus two fold problem of inadequacy and unsustainability that perennially presented by agricultural credit" (AIRCS). The greatest challenge to the distribution of agriculture credit, besides other things would be the repayment condition and the rate of interest. The emerging threat to the increasing story of agriculture credit is that it has being accumulating tremendous amount of loan outstanding every year. Since 1980-81 to 1987-88 there was a steady rise in the total outstanding of agricultural loan on long-term loan from 16.9% to 19.5%, however, for short term agriculture loan the total outstanding is decreasing since 1980-1990 from 13.3 % to 6.1 % respectively[106]. In 2007-08 the total loan outstanding of Rs 2800.40 billion. In fact, the increasing productivity of the agriculture and the accumulating indebtedness of our farmer is a strange paradox, Malcolm Darling in his

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[105]. Ramakumar, R, Chavan Pallavi (2007), "Revival of Agricultural Credit in 2000s: An Explanation". *Economic and Political Weekly,* December 29, 2007. pp. 57-63.

[106]. Reddy, D Narasimha (2006), "*Economic reforms in Agrarian Crisis and rural Distress"*. 4th Annual BJR Memorial Lecture

famous work "Punjab Peasant in Prosperity and Debt"[107] says that Punjab which is one of the most prosperous provinces is also probably the most indebted. Indebtedness has not only become a burden to the farmer but hinder the further flow of credit. It has led to farmer suicide in several parts of the State including Andhra Pradesh, Haryana, Maharashtra, Telangana, Orissa, Punjab, and West Bengal due to multiple reasons like failure of the monsoon rain and improper investment. Among many other reason the problem of over dues and poor recovery of loans is posing a major threat of concern to the lending institutions.

In 1988 only 57% of total agricultural lend out are recovered but declined to 54% in 1992[108]. Poor recovery of agriculture loan hinders the smooth flow of credit thus reducing the lending cycle and mechanism of the credit institutions. Several factors are responsible for high default payment rate. The external factors such as the natural calamities inadequate income generation, gap between the time of credit delivery and production period, faulty government policy of debt relief measures, inadequate grace period in case of longer period investment and interest/credit subsidy/concession. Defective assessment of loans, ineffective supervision and absence of timely action are the internal factors contributing to the low recovery of loan in rural areas. Several empirical studies reveal that the beneficiaries of rural credit extension policies and programme are the rural well-to-do and not poorer farmers (Lipton 1976)[109].

Besides the factors mentioned above the high cost of transaction for fund with low financial margins add to the non-repayment of rural agriculture loans. This high cost of transaction is due to the nature and volume of business, the staffing pattern and the location of bank branches. Perhaps, the volume of loan outreach the number and the size of loan disbursed, credit deposit ratio and the margin cover cost of fund as well as expenses in sanctioning, supervising add recovery of loan etc. affecting the viability of banks as a whole. “No doubt a lot of pronouncement are being made, and the people who matter frequently do talk about the farmer but they do not walk the talk” (Patel, V.B, 2008). Nonetheless, the well framed out policies programmes and the amount that was distributed is challenged due to amount of risk it accompanies. Keynes in his

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107. Darling, Malcolm L (1905), Punjab Peasant in Prosperity and Debt. *Oxford University Press*.
108. RBI, Report on Trend and Progress of Banking in India (1990-91 and 1992-93) Bombay, pp. 24.
109. Lipton, Michael (1976), “Agricultural Finance and Rural Credit in Poor Countries”. World Development, Vol.4, Issue 7, pp.543-553.

"General theory" identifies two types of risk that affect the volume of investment. The one being the risk that arises from the borrower's side because of the uncertainty of expected yield in the business venture will always persuade the borrowers at a low rate of interest. On the other hand, the same situation creates the "lender's risk" of default by the borrower of which Keynes term it as "moral hazard" or involuntary, due to poor returns on investment. Infact, this has necessitates the lender to charge a rate of interest high enough to induce him to lend. Inspite of various interest subventions to farmers from 7 per cent in 2006-07 on short term crop loans and consequent announcement of 1 per cent rate of interest in 2009-10, agriculture loan recovery continue to perform poorly. The loans outstanding increased from 37,302 crores in 2000-01 to 2, 56,256 crores 2011-12 respectively. In 2009 the total agriculture loan overdue of Nagaland amounts to 1716.61 crore which is 82.35% of the total lend out, thus the total agriculture loan recovery in the state was only 17.45% only.

Table 5.23: State of Repayment in the Study Villages under Kohima and Phek Districts

State of Repayment	Kohima District			Phek District			All
	Kohima	Chedema	Total	Phek	Ketsapo	Total	
Total no. of borrowers who had repaid the loan in full	6 (28.57)	7 (17.05)	13 (21.31)	8 (16.66)	5 (18.00)	13 (17.10)	26 (18.97)
Total no. of borrowers who had repaid the loan upto 50%	4 (19.04)	8 (20.00)	12 (19.67)	16 (33.33)	8 (28.57)	24 (31.57)	36 (26.27)
Total no. of borrowers who had repaid the loan below 50%	8 (38.09)	17 (40.50)	25 (40.98)	16 (33.33)	7 (25.00)	23 (30.26)	48 (35.05)
Total no. of borrowers who had not repaid any amount	5 (23.80)	6 (15.00)	11 (18.03)	9 (18.75)	7 (25.00)	16 (21.05)	27 (19.70)
ALL	**21 (100)**	**40 (100)**	**61 (100)**	**48 (100)**	**28 (100)**	**76 (100)**	**137 (100)**

Source : Field survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The status of repayment condition in the study villages indicates that, only 18.97% of the borrowers had repaid the full amount of loan borrowed. About 26.27% of

the household borrowers had repaid more than 50% of the amount loan. Up to 35.04% of the farmer borrower had repaid below 50% of the amount they have borrowed. Still 19.70% of the borrowers did not repay any amount. Village-wise details of repayment conditions in selected Districts are shown in table 5.23. The table shows that 28.57% in Kohima village has repaid the full amount borrowed, however only about 19.04% of the borrowers had repaid upto 50 percent and still 23.80% of the borrowers have not repaid any amount. In Ketsapo village of Phek District about 25.00% of household borrowers had not repaid any amount, only 16.66% of the household borrowers had repaid the full borrowed amount in Phek village, and 17.05% in Chedema and 18.00% in Ketsapo village respectively. When looked into the household types of borrower and its relation to the state of repayment across the study villages, it is not one category of farming community but a common problem for all groups. The table 5.24 reflects on the repayment condition of the household borrowers in Kohima Phek Districts.

Table 5.24: State of Repayment among the Different Categories of Farmers in Kohima and Phek Districts

State of Repayment	Marginal Farmers		Small Farmers		Semi Medium Farmers		Medium Farmers		Large Farmer	
	Kohima	Phek	Kohima	Phek	Kohima	Phek	Kohima	Phek	Kohima	Phek
Borrowers who had repaid the loan in full	--	--	4 (26.67)	2 (15.30)	7 (29.17)	2 (10.53)	1 (5.26)	5 (16.21)	1 (50.00)	4 (30.76)
Borrowers who had repaid the loan up to 50%	1 (100)	--	--	3 (23.07)	1 (4.17)	6 (31.58)	10 (52.63)	12 (38.71)	--	3 (23.07)
Borrowers who had repaid the loan below 50%	--	--	7 (46.66)	4 (30.76)	9 (37.5)	8 (42.10)	8 (42.11)	9 (29.03)	1 (20.00)	2 (15.38)
Borrowers who had not repaid any amount	--	--	4 (26.66)	4 (30.76)	7 (29.16)	3 (15.79)	--	5 (16.13)	--	4 (30.76)
Total	**1 (100)**	**--**	**15 (100)**	**13 (100)**	**24 (100)**	**19 (100)**	**19 (100)**	**31 (100)**	**2 (100)**	**13 (100)**

Source : Field survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The data indicated that in case of marginal farmers, the lone household borrower in Kohima District has repaid 100% of the loan. Similarly in case of small farmers, Kohima District 26.67% of the small farming household has repaid the full amount and

about 26.67% had repaid below 50% of the loan. However, still 26.67% of the borrowers did not repay any amount of the loan. Whereas, in Phek District, 15.30% of the household borrowers had repaid 100% of the loan, 23.07% had repaid up-to 50% and 30.77% of the small farmers had repaid below 50% and about 30.77% did not repay any amount yet. In case of semi-medium farmers 29.17% of the household in Kohima District had repaid the total amount borrowed, while 10.53% in Phek had repaid the full amount. 29.16% in Kohima and 15.78% in Phek did not repay any amount of the loan they had borrowed. Whereas, in case of medium farmers 5.26% of the household borrowers in Kohima and 16.21% of the borrowers in Phek had repaid the total amount borrowed. While 52.63% in Kohima and 38.71% in Phek had repaid up to 50% of the loan borrowed. Still 42.11% in Kohima and 29.03% of the borrowers in Phek respectively had repaid less than 50% of the loan borrowed and about 16.13% in Phek had not done any repayment at the time of survey. In case of large farmers 50.00% in Kohima 30.76% in Phek had repaid the full amount. Payment up to 50% household borrowers comprises of 23.07% in Phek, 50.00% household borrowers in Kohima and 15.38% in Phek has repaid below 50 % and still 30.77% in Phek has not repay any amount at the time of survey.

Article 371(A) of the Indian constitution restrict the transfer of property to non local wherein land cannot be taken as the collateral security which has been one of the major constraint in the flow of Ground Level Credit (GLC) to both the side of the borrowing and the lending community in the state. One reason for the high cost involved in the agricultural lending is because it involves handling a large numbers of small accounts. Besides, the problem of sustainability and its relevance in the absence of zero cost advantage, it is difficult for any financial institution to run for the benefit of the borrowing community along. Therefore, some of the challenges of agriculture lending by the institutions (Supply side**)** are problems of overdue and poor recovery, handling of large no. of small accounts, illiteracy and ignorance of the farming community and other difficulties of expansion/extension of branch banking facilities. The government of India in spite of the growing overdue expands the credit delivery system in massive capacity. It has introduced measure such as the loan waivers to relief the farmers out of the debt trap.

An enquiry into different parts of the country found the wide existence of rural indebtedness among the Indian peasantry, and it is popularly said that, "Indian farmers are born in debt, live in debt and die in debt"[110]. There are multiple causes and reasons as to why our farmers cannot break away from the cycle of debt burden such as the natural calamities leading to crop failure, lack of saving in the borrowing household, repayment of old debt bringing about no immediate productive effect, and borrowing for ongoing domestic expenditure purposes. These problems arise due to poverty of our peasantry. Jather and Beri remarks that, "if indebtedness is a cause of poverty, the reverse also is equally true"[111]. To do away with rural indebtedness the All India Rural Credit Survey of 1951-52, the Gadgil Committee of 1944 and Sivaraman Committee of 1976 besides recommending not only for extension of credit service to the marginal and small farmers but advice and devise ways to reduce debt by easy installments.

5.7: Agriculture Credit Awareness of the Farmers

Despite of a wide network of financial service delivery to the agriculture farmer there are several issues of concern impeding to access institutional credit. A large numbers of rural farmers are unaware of the availability of institutional financial assistance for agriculture purposes. The publicity through media has little impact on the rural farmers due to illiteracy, ignorance and wrong concept about borrowing. On analyzing the general awareness of institutional credit for agricultural activities between the 2 Districts of Kohima and Phek, the responses of 225 farming household are tabulated below in table 5.25. The lending institutions have various tools and technique to attract the customer to come forward to borrow. In the course of field survey, it was identified that the rural farmers got information about agriculture credit mostly from 5(five) identified channels given in table. About 15.11% of the respondents are aware of the availability of institutional credit through the banking personnel, 12.00% through various forms of publicity by the media, and 18.22% of them from the village leaders. About 34.22% of the household got information on institutional credit through friend and neighbors, while still 12.88% of the household are not aware of the institutional

[110]. Darling, Malcolm L (1905), *"Punjab Peasant in Prosperity and Debt"*. Oxford University Press.
[111]. Jether and Beri (1949), *Indian Economics; A comprehensive Survey"*, Vo.1. Oxford University Press, Chennai.

credit available in the nearby banking branches. However, in both rural and urban areas, the banking personnel are plays an important role in creating general awareness about various facilities. Up to 7.55% of the awareness is contributed through financial literacy camps and others.

Table 5.25: Respondents' Awareness about Institutional Credit for Agriculture in Kohima District and Phek District

Name of the Village	No. of respondent aware about institutional credit for agriculture					No. of respondents not aware of the Institutional credit	Total (village-wise respondents)
	From Banking personnel	Media	From village leaders	From friends & Neighbors	others		
Kohima	9 (15.25)	16 (27.11)	7 (11.86)	14 (23.72)	5 (8.47)	8 (13.59)	59 (100)
Chedema	7 (14.25)	3 (6.12)	9 (18.36)	21 (42.85)	5 (10.20)	4 (8.16)	49 (100)
Phek	8 (11.94)	3 (4.47)	13 (19.40)	29 (43.28)	5 (7.46)	9 (13.43)	67 (100)
Ketsapo	10 (20.00)	5 (10.00)	12 (24.00)	13 (26.00)	2 (4.00)	8 (16.00)	50 (100)
TOTAL	**34 (15.11)**	**27 (12.00)**	**41 (18.22)**	**77 (34.22)**	**17 (7.55)**	**29 (12.88)**	**225 (100)**

Source : Field Survey 2013-14.
Note : Figures in the table indicate no. of households and in parenthesis are percentages

In Kohima village, about 27.11% of the household got information regarding institutional agriculture credit through the publicity played by media, 23.72% of the household through friends and neighbors and 15% of the household from banking personnel. Still 13.59% of the household surveyed are not aware of the institutional credit for agriculture during the time of survey. Whereas, in Chedema village friends and neighbor plays a dominant role in providing information relating to agriculture credit comprising of 42.85 % and 18.36% from village leaders. The role of media is less prominent in this village with only 6.12% and the banking personnel with 14.25% too. Chedema is a small village and only about 8.16% of the household surveyed are unaware of institutional credit for agriculture. Whereas, in Phek village, friends and neighborhood plays a dominant role in propagating the institutional source of credit for

agriculture with 29 household (i.e. 43.28% of the household surveyed) sharing the same information. The role of village leaders in this regard consisted of 19.40%, while banking personnel 11.94% and 4.47% by media, still 13.43% of the household are ignorant about it. Similarly, in the case of Ketsapo, friends and neighbors top the list with 26.00% and village leaders with 24.00%, banking personnel with 20.00% and media 10.00% respectively, 16.00% of the household are not aware of the availability of agriculture credit in the banking institutions.

The household also cited some common problems in accessing institutional credit which are reflected in the table 5.26. Here a single respondent cited multiple problems faced in the borrowing process, among them the prominent one is the difficulty in approaching the bankers. In Kohima village 93.22% of them resound the unfriendly attitude of the banking personnel, 33.80% compliant relating to the lengthy procedure and 20.33% of the lack of awareness.

Table 5.26: Household Having Problems in Accessing Institutional Credit in the Study Village under Kohima and Phek Districts

Name of the Village	No. Of Respondent Having Problems Relating To						Total Respondents
	Lengthy Procedures	Distance / Location of The Banks	Unfriendly Attitude of The Banking Personnel	Complicated Procedures	Lack of Mortgages & Securities/ Guarantors	Lack of Awareness	
Kohima	20 (33.89)	--	55 (93.22)	16 (27.11)	11 (18.64)	12 (20.33)	59 (100)
Chedema	33 (67.34)	29 (59.18)	37 (75.51)	27 (55.10)	19 (38.77)	20 (40.81)	49 (100)
Phek	53 (79.10)	61 (91.04)	40 (59.70)	18 (26.86)	21 (31.34)	17 (25.37)	67 (100)
Ketsapo	49 (98.00)	47 (94.00)	30 (60.00)	37 (74.00)	17 (34.00)	29 (58.00)	50 (100)
Total	**155 (68.88)**	**137 (60.88)**	**162 (72)**	**98 (43.55)**	**68 (30.22)**	**78 (34.66)**	**225** (100)

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

Similarly, in Chedema village 75.51% have similar problems relating to the banking personnel, 67.34% about lengthy procedure and around 59.18% have problem on

distance and location of the banking branches and 55.10% on complicated procedure. About 40.81% faced problem due to lack of sufficient information on agriculture credit, 38.77% of the respondent have problem relating to collateral securities and guarantors. Whereas, in Phek village 91.04% have problem on location and distance of the banking institution, 79.10% of the respondents complaints of lengthy procedure, 59.70% on the unfriendly attitude and 31.34% on lack of securities. While household having complaint against complicated procedure are 28%, and 25.37% for lack of awareness about institutional credit. In Ketsapo village, the prominent compliant being the lengthy procedure which is 98% and 94% on the location of banking institutions, 74% on complicated procedure and 60% on the unfriendliness arising due to lack of knowledge (58%) which goes on in circle manner. These borrowing household has suggested the following for improving the borrowing procedure as tabulated under in table 5.27.

Total 5.27: Borrowers Suggestion for Improving Institutional Lending to Agriculture in the Study Villages under Kohima and Phek Districts

Name of the Village	Suggestion for Improving the Lending Process					
	Low Interest Rate	Nearness of the Banks	Friendly Behavior of the Bank	Quickness of the Banking Procedure	Simplified Procedure	All
Kohima	1 (4.76)	--	4 (19.04)	9 (42.85)	7 (33.33)	21 (100)
Chedema	1 (2.5)	3 (7.5)	3 (7.5)	13 (32.5)	20 (50.00)	40 (100)
Phek	3 (6.25)	8 (16.66)	10 (20.83)	11 (22.91)	16 (33.33)	48 (100)
Ketsapo	5 (17.85)	4 (14.28)	4 (14.28)	2 (7.14)	13 (46.42)	28 (100)
All	**10 (7.29)**	**15 (10.94)**	**21 (15.32)**	**35 (25.54)**	**56 (40.87)**	**137 (100)**

Source : Field Survey 2013-14
Note : Figures in the table indicate no. of households and in parenthesis are percentages

The formal borrowers- about 40.87% suggested for a simplified procedure in the future and 25.54% for quickness of services and 10.94% on the nearness of banking

institute, which will solve the problems of the irksome officers. Still 7.29% of the borrowers wants lower rate of interest and on top of that many of the farmers want government intervention and assistance in the sale of their products. In Kohima village the borrowers besides other things, suggested for quickness of service (42.85%) and 33.33% for simplified procedures. All the borrowers are satisfied with the distance and location of bank which are located within the village jurisdiction, but few of them suggested for a more organized approach of agriculture borrowing with concern department as an outlet for the final agricultural product. However, in Chedema village, 50% of the borrowers requested for a simplified procedure, 32.5% to quicken the process of borrowing, while 7.5% of the respondents expressed their desire for a facility which is nearer with better work relation. The borrowers feel that agricultural borrowing should be to the least possible rate of interest.

Similarly, borrowers from Phek and Ketsapo look forward for a simplified procedure at 33.33% and 46.42% respectively, while 22.91% of the borrowers from Phek feels by shortening the borrowing process will not only reduce the cost of transaction but will attract more farmers to come forward to borrow. In Ketsapo village, 17.85% of borrowers are in favor of cutting down the interest rate and 14.28% of the borrowers want a closer facility with better work co-relations.

5.8: Recapitulation

It was observed that the borrowing households were mostly producing enough rice for consumption and were willing to take up innovative methods of cultivation which have high marketable values. Besides, the borrowing households have better exposure to market demand condition, it can be clearly mentioned that farmer's level of education and the general awareness about the availability of scheme determines borrowing rather than the size of land holding. It is also identified that the semi-medium and medium groups of farmers are willing to take up risk in the cultivation venture, but perhaps these groups of cultivators who are borrowing have their source of earning from either government or private sectors. The borrowing household usually have someone or the other who is an educated member in their family. Size of land holding doesn't

seem to be an important issue for most of the household surveyed nor thus it affect borrowing because in the Naga context land mortgages are not applicable. The exigency of a guarantor is met with the help of the VDBs and some families bearing the risk themselves. It was also found that the farmers have misconceptions about borrowing; they feel that is a shame and a disgrace for the family to resort to any types of borrowing and in many instances, several families are not revealing their status of borrowing. Many of them are content, and proudly admit that they are self sufficient, and for agriculture purpose, they never and will never borrow. Records on the level of income and employment generation are very vague, which is the major drawback of the study, though the problem of seasonal unemployment is partially solved through borrowing. The number of occupancy to diminutive agriculture activities is seen and it has obviously motivated the farmers to adapt to new methods of cultivation rather than stick to old methods and practices of agriculture cultivation.

One conclusion that can be drawn here is that farmers who are self-sufficient in rice production are gradually moving toward the cultivation of marketable products, so is the case in Kohima village and Chedema village of Kohima District. Other inspiration that follows is "demand create its supply" due to growing population in urban areas and due to an increasing market demand for agricultural products, the farmers are too wise taking advantage of the situation. It was noticed that retired officers are going back to field to grow fruits, vegetables and rear cattle, most whom are large land holders. They took up agriculture in their free time as hobby and on health matter rather than financial value alone. Since, cultivation of rice is an inherited old practice; the farmers are more accustomed to it, and never want to give up for any other agriculture purposes. However, the study found that most the farmer practicing terrace cultivation and jhum are independent with high skill, though there is not much profitability.

CHAPTER VI
SUMMARY AND CONCLUSION

6.1: Background

In the backdrop of the theoretical discussion and the empirical findings in the precedingchapters, it is wise full to come to a concluding remark basing on facts and suggestion emanating from the study. The matter of the study in this thesis is to see the extent of credit availability and its impact among the Naga farming community with special focus in the two Districts of Kohima and Phek. It also attempts to find out the factors associated to borrowing and repayment conditions. In many of the rural villages, farmers are caught up in the vicious circle of poverty due to lack of capital coupled with traditional methods of farming which is based on subsistence farming. Inspite of a wide spread of financial assistance available within their reach in numerous forms, very often our farmers are ignorant and have wrong perception about it. Several research studies found that there is a wide disparity in the credit allocation across the region of the country, besides the most needful group of people especially the small and marginal section of the farmers are neglected by the institutional sources of lending and are exploited the most by the money lenders.

In an agrarian country like India, if the backwardness of agriculture prevails due to uncertainty and dependability upon nature such as the monsoon, the fertility of the land, the agriculture system in Nagaland is crippled withresource constraint, age old methods of cultivation with no innovative technique of farming on large scale. The subsistence farming arising out of the fragmentation of land holding due to geographical terrain results in low productivity. A farmer with a parcel of land with just a spade and a machete is almost impossible to earn his living in a constantly inflationary economy. Perhaps, the off season of the agriculture systemleft a farmer unemployed for a good number of days. To bridge this gap of unemployment and to increase the productivity, scientific methods of farming through better capital investment is achievable with the help of the financial assistance from the banking institutions along with agriculture scientists. Basing on this ground, the policy planners emphasis on the role of institutional credits as the catalyst tool

to improve the farming condition of the farmers and enhance the economic growth of our country in general and Nagaland in particular.

Over the recent years, increasing attention is given to escalate the flow of institutional credit to reach the farmer particularly the marginal and small farmers in the remotest parts and corner of the country.A number of research studies and theoreticalmodels that were developed throughand evidences are generated mainly basing ona few statesand neglecting to examine the issues pertaining to the North Eastern Regionespecially Nagaland. The specific situation and the conceptual issues dealing with different state differs and to supplement the existing literature, it is felt that there is a need to generate empirical evidences specific to a region evolving appropriate rural development strategies. In this context present studyassess the extent of credit availability and seeks to examine the factor determining borrowingand theimpact of borrowing into the agriculture sector in Nagaland.Nagaland with regard to constitutional provision given in article 371(A) of the Indian constitution protects and safeguards that no Act of Parliament can be made applicable particularly in relation to transfer of ownership of land and customary laws of Nagaland unless the State Assembly decides in its favour.

Depending on the frame out objectives, three major hypotheses have been formulated. The first one is that the marginal and small farmers are in an unfavorable condition to access the institutional credit with higher transaction cost and complexity in procedures. Secondly the land size and family assets are the major factors that determine the accessibility of institutional credit than education and family size of the borrower. The third hypothesis is to assess the progress in income and employment levels of the borrowers in relation to the existing credit facilities.

Keeping in mind the magnitude of the problem and its importance in the developmental strategies of a state like Nagaland, it has being felt that it is of practical significant to study the problem at village level following an intensive approach. Nagaland, a dominant agricultural state with 80% of population has 60% of workforce engaged in the agriculture sector. The importance of farm credit as a critical input to agriculture is reinforced by the unique role of agriculture in the macroeconomic framework and its role in other developmental aspects. Therefore, a proper credit linkage

is essential for the development of agriculture in the state. The role of non-institutional source of credit is very negligent in the state yet an institutional source of credit system is revamping the agricultural system in the state. Besides, the unique constitutional provision with regard to the delivery of finances through the Village Development Board (VDBs) can be strengthened out to reach to the rural masses for agriculture development activities. This decentralized system of governancewhichhasempowered the VDBs to play the role of both financial intermediaries and non-banking financial intermediaries in the state if streamline with a viable strategy can touch the needy farmer more intensive than any other institution.

At the macro level of the study, the entire Districts of the state were analyzed which covered the period from 2001 to 2011. And at the micro level analysis twoDistricts i.e. Phek and Kohima are selected purposively and the study covered the period of 2013-14. Phek District consisted of 2026 sq.km of the land area of the state, and practices mixed cropping system with 38148 ha of area under cultivation. Thepopulation of the district is 163294 according to 2011 census.

Kohima District is one of the oldest of the 11 Districts of Nagaland and is situated at an altitude of 1,444.12 m above sea level, and covers an area of 17.5 sq. km with 13 thousand hectares of land under settled cultivation system. It has a total population of 270063 according to 2011 census. Terrace rice cultivation is the dominant agricultural system of both the Districts.

Both secondary and primary data sources are used for the study. Primary data are collected through interview and questionnaire methods, in which a pre-tested comprehensive schedule was designed especially for the purpose and canvass in the study area. The secondary data are obtained from different sources such as administrative reports, Handbook of Statistics, records from the banks and Directorate of Agriculture, and necessary information and data from respective District Agriculture Office and supplemented by published and unpublished articles, journals, books and newspapers. It also employs statistical tools and techniques for analyzing the data and this include binary logit models.

6.2: Major Findings

Some major findings of the study are jotted down as follows: -

6.2.1:Non- Institutional Credit

About 39.11% of the households in the study villages are using their own resources and are self-financing and not borrowing from any source.The role and existence of professional money lender/other non-institutional sources of lending for agriculture activities was not found in the study villages. None of the household surveyed were found borrowing cash from non-institutional sources for agriculture purpose except a few cases of exchange in kinds like seeds which is very trifling.Borrowing for the purpose of agriculture and allied activities in the informal sector must have existed within family relations or friends but very minimal and not found among the members of the selected study villages.

Oral tradition tells of how the farming community exchanges quality seeds, tools and implements and other household article in kinds or in the form of labour services before currency was in circulation.Paddy is often recognized as the commonly accepted measure of value. In olden days, people exchange rice for meat, rice for tools and rice as the payment of daily wagesmeasured in small weaved bamboo basket and 50% over and above capital is charged as rate of interest after one production cycle of rice.In rural villages exchange of farmer's day service for another farmer's day service is a common practice till today.

6.2.2: Institutional Lending to Agriculture

Out of the total 225 household surveyed, about 60.88% of the household areidentified borrowing from institutionalsources for agriculture and allied activities. Out of which, about 61 household i.e. 57% of the household in Kohima District are borrowing from institutions for agriculture and allied activities.In Phek District a total of 117 household are surveyed of which 76 household i.e. 65% of the household are accessing the banking services for agriculture and allied activities.

The Marginal Farmers borrowers consist of only 0.72%, 20.43% Small Farmers, 31.38% Semi Marginal Farmers, 36.49% Medium Farmers and10.49% Large Farmers household borrowers had avail credit from institution in the study period. Kohima has the advantage of being the capital city of the state and has 23 different banking branches in the District for the service of 2, 70,063 people as per 2011 census. However, in Phek District as per 2011 census there are 8 different banking branches for a total population of 1, 63,294 (2011 census), which means 1 bank is at the service of 20,412 people

6.2.3:Size of Land Holding

Though there is not a single landless farmer, there is high fragmentation of land holding. Every household have at least 10 to 11 parcel of land in different location within the village boundary ranging from 3 acres per parcel holding, mostly of reserve forest.Individual landholdings dominate in the 2 Districts (Kohima and Phek). Out of the total 225 household surveyed, about 205 households which mean 80.39% of the households are operating individually owned land. In Kohima District 101 household are operating individually in their owned land out of the sample 108 household surveyed i.e. 93.51% are individual land. Whereas, in Phek District 104 household are operating individually in their owned land out of 117 household surveyed i.e. 88.88% are individual land ownership.

Joint ownership of property also still exists among the Nagas, though very minimal. About 20 household surveyed are operating/ cultivating such property which mean 8.88% of the Farmers are cultivating on joint landownership. Out of which about 7 household are cultivating such land which is about 6.48% of the total household surveyed in the District. Correspondingly, in Phek District13 households are found operating joint properties which is about 11.11% of the household surveyed in the District itself.

6.2.4: HouseholdAssets/ Household Income

The asset possession of the household can be broadly classified into fixed and moveable assets. The most important fixed assets are the houses, the land holding in the

form of a reserved forest, terrace fields and the jhum field.Other important non-fixed assets of the farmers are the domesticated animals, furniture, electronics goods and agricultural implements for self-consumption and personal uses.About 27.55% of the household have pucca house and about 72.44% of the farmers have Kucha house in the study villages.The farmers who have source of income not only from agriculture sector alone but from the service sectors and have exposure outside of the village community have more innovative ideas of farming and are in a better position to access agriculture loan.The marginal and small farmers and household who have no other source of income except from the agriculture sector have no plan even to access the available loan in the banking institutions.

6.2.5: Family Size

The average family size of all the borrowing household and non-borrowing household is 6 members, whereas, it is 5 members in Kohima District and 7 members in Phek District respectively. The other family members usually the children studying or working are usually part-time helpers in the field during holidays and peak season of cultivation. Families with 2 members in agriculture sector constitute 54.01% of the borrowing household. While families with 2-4 members in agriculture are 30.65% and families with more than 4 members are 15.32% of the borrowing household. However, the work dependency ratio to agriculture sector in the borrowing household is comparatively more than those of the non-borrowing household. It was however observed that these family members who are not fully engage in agriculture plays a key role in influencing their parents or families about innovative ideas and technique of cultivation and about the availability of loans/credit for agriculture and allied activities.

6.2.6: Literacy Level

About 30.69% of the household surveyed are illiterate and 49.64% read up to matriculation and only 11.68% of the farmer read about matriculation. Two members of the borrowing household in Kohima belonging to large category of farmer read up to master level and are cultivating oranges on large scale.As reflected above, literacy is indirectly influencing the farming community to look for institutional source of finance for

better methods of cultivation in one way or the other as the educated children are initiating and suggesting parents to practice innovative methods of cultivation.

6.2.7: Agriculture Credit Awareness of the Farmers

There are 5 identified channels through which the farmers got information on the availability of institutional credit in the study villages. The followings are the findings:About 15.11% of the respondents are aware of the availability of institutional credit through the banking personnel. Whereas, about 12.00% through various forms of publicity by the media. While about 18.22% of the respondents got information regarding institutional credit through the village leaders, 34.22% of the household through friend and neighbors. However, still 12.88% of the household are not aware of the institutional credit available in the nearby banking branches. Nonetheless, in both rural and urban areas the banking personnel plays an important role in creating general awareness about various facilities. Up to7.55% of the awareness is contributed through financial literacy camps and others.

6.3: Generation of Income and Employment Level

The impact of borrowing can be measured only if the earlier methods of cultivation and its output are understood.

6.3.1: Level of Income and Output

Credit helps marginal and small farmer not only for survival but enhances income. It has the following indicators: the farmer practicing TRC has a Net profit margin of 11.49%. Whereas, for jhum cultivators (comprising of only 0.72% of the household borrower), earns a Net profit margin of 7.00% respectively.Household borrowers for tree plantation show a negative impact because it takes several years for a tree to mature for utilization. These tree plantation household borrowers had availed the loan mostly during 2009-2013, though most of them have great expectation for the future harvest, yet it has a negative profit margin of -26.32 % in the current period. Similarly, for farmer borrowers in Vegetable gardening, theNet profit margin shows at 23.26%. These groups of farmer are

mostly Small Farmer and Medium Farmer and they shows a promising future if adequate facilities are provided. The borrower for fruits growers comprise of 20.43% of the household borrowers and has about 33.86% share of the total amount borrowed. They earned a profit margin of 15.45%. Farmer borrowers for piggery and farm related an activity earns the highest rate profit margin up to 50.77%, whereas, the farmer borrowers among the vegetable vendors or for agri-business, fetch a Net profit margin of 38.66%.Floriculture is becoming a blooming business especially in the urban areas of Kohima District with 3.64% of household borrowers and total share of 1.59% amount borrowed, but with 13.33% profit margin within a couple of years.

6.3.2: Level of Employment Generation

With the rising rate of urbanization and township, the demand for agriculture product is also increasing at an immense rate every year.Taking advantage of the increasing demand situation the rural farmers are grabbing the opportunity by resorting to more marketable agriculture products. By involving in such practices it requires not only land and labour but capital which is possible through financial support from institutions. About 93% of the borrower responded that practicing multi-cropping and mix-cropping kept them occupied throughout the year.

The no. of days employed has increased tremendously for all activities except Terrace and Jhum farmers, it was observed that many farmers are minimizing the working days in paddy field for other activities like gardening and rearing of domestic animals and cattle. Gone are the days when our farmers gave very little time and attention for the cultivation of fruits and vegetables, these are grown alongside of the paddy fields, 90% of the vegetable vendor borrowing for their activity expressed contentment for their daily activity. With borrowing, the average no of working days has increased to 36.4% in Kohima district whereas in Phek district it is 29.29% after accessing financial assistance from the institution.

In contrary to all other activities, the number of working days in terrace field has gone negative which indicate that farmers are minimizing the number of work days in paddy field for other crops. Forestry, piggery and floriculture which are of minute

activities for a farmer has now gain prominence with borrowing. There is a drastic change in terms of work hour to day work and many are adopting as full time occupation.Reasons such that activities which are neglected prior to the realization of its market values are revived after borrowing from the institutions. In Nagaland trees are grown wild, there was hardly any farmer or family who gave time and money to take care of the forest resource, but with the change of time, it is seen as an industrious investment. Pig and flower rearing are activities which occupies not even an hour of the day, now with increasing market demand, people are giving due importance from hobbies to full time occupation

6.4: Status of Repayment

The status of repayment condition in the study villages indicate that,only 18.97% of the borrowers had repaid the full amount of loan borrowed. About 26.27% of the household borrowers have repaid more than 50% of the loan. Up to 35.04% of the farmer borrower have repaid below 50%. Still 19.70% of the borrowers did not repay any amount. Repayment across the different categories of farmersreveals that in case of marginal farmers, the household borrower in Kohima District has repaid 100% of the loan. While in case of small farmers in Kohima District 20% of the small farming household had repaid the full amount and about 46.66% have repaid below 50% of the loan. Still 26.66% of the borrowers did not repay any amount of the loan.

Whereas, in Phek District, 23.07% of the household borrowers had repaid 100% of the loan, 15.38% have repaid up-to 50% and 30.67% of the small farmers haverepaid below 50% and about 30.76% did not repay any amount yet. However, under the Semi-Medium Farmers 16.66% of the household in Kohima District had repaid the total amount borrowed, while 31.57% in Phek had repaid the full amount.About 29.16% in Kohima and 15.78% in Phek did not repay any amount of the loan they had borrowed. Similarly about 25% of the household borrowers from medium farmer category in Kohima and 16.21% of the household borrowers in Phek had repaid the total amount borrowed. While 12.15% in Kohima and 22.58% in Phek have only paid up to 50% of the loan borrowed. Still 50.00% in Kohima and 29.03% of the household borrowers in Phek respectively have repaid less than 50% of the loan borrowed and about 12.50% in Kohima and 32.25% in Phek had not

done any repayment at the time of survey.However, among the large category of farmers 40.00% in Kohima 30.76% in Phek had repaid the full amount. Payment up to 50% household comprises of 40.00% in Kohima 23.07% in Phek, 20% household borrowers in Kohima and 15.38% in Phek has repaid below 50 % and still 30.76% in Phek has not repay any amount.

6.5: Concluding Remarks

The above observations clearly reveals that borrowing and lending from the informal sector was mostly in kinds among the local resident and it can be safely concluded that the role of the money lender is negligible in the study villages. The introduction of institutional sources of finances is bringing a new transformation in the methods and practice of agriculture cultivation with the role of VDB's as the guarantor of borrowers. The general awareness about the available sources of finance for agriculture activities created among the rural villagers by the village leaders is also very prominent.In fact, it has boost the borrowing of thoserisk bearing farmers who always wants new and innovative methods of farming.

Though the size of land holding and the household assets or income are always considered a major factors of borrowing, it is observed that literacy and the awarenessabout such programs plays an equally important role for the farmer to comeforward to borrow. Perhaps, it was also observed that most of the farmer have wrong notion about borrowing unless proper sensitization of the scheme is created. Borrowing is always considered a shame in the society, about 33% of the borrowers are trying to hide that they had never borrow.

Besides, to assess the level of income and employment brought about by borrowing is constantly is in vague. It becomes indistinguishable for the borrowers themselves to draw the line of progress or change before and after borrowing. It has in fact, reinforced the farmers to engage in more time of productive labour hour. However, in spite of the wide existence of credit facilities and the large number of borrowers for agriculture activities,theprogress in income and employment levels of the borrowers are insignificant and difficult to assess.

6.5: Policy Implications

The analysis in the thesis brought out a subsequent call for expeditious actions and policy implications such that:

i) The supply and demand pattern mismatch needs to be rectified.

ii) The responsible authority should sensitize the farmer about rightmethods of investmentfor example the land suitability of each type of crop and vegetablesto be cultivated by agriculture scientist and concerned department.

iii) Attention should be given in the areas of resource conservation such as the soil and water management.

iv) The government should also strengthen the existing cost-effective technologies and inputs through indirect methods of agriculture finance to the needy farmers.

v) A pragmatic approach in formulating and implementation of agriculture price support policies should be adopted along with government support to help farmer sell his surplus at an appropriate market.

vi) More banking facility should be set up in rural areas with serviceability to the farmer on a more customer friendly manner with the aims to break away from the cycle of subsistence farming and rural poverty.

vii) Borrower's repayment at the stipulated time should be acknowledged to boost recovery of loan in time.

viii) The existing system of VDB as guarantor of borrowers along with the farmers club in creating awareness about financial literacy should be augmented.

ix) Co-operative farming can be initiated and encouraged among joint ownership of land holders, or among villages or areas and Minimum Support Price (MSP)should be assure so that agriculture price stability is maintain.

x) Agro-based industries (small and cottage industries) should be encouraged with appropriate strategies and tools, so thatnone of the agriculture produce goes wasted.

xi) Infrastructural facilities such as agri-link road, transportation facilities and marketing shed in town/city with adequate good storage facilities will help and encourage our farmer to practice large scale production to meet the growing market the demand.

xii) Crop insurance should be extended to the all borrowers.

A balance path of investment can be plan out, as that of Social Marginal Product (SMP) of investment with the Private Marginal Product (PMP) as was propounded by Rosenstein-Rodan, so that shortages and wastages do not arises in the village agricultural set up.As productivity is assured through right outlay in the methods of cultivation, so is thestimulant of the rural economy.

Appendix

ANNEXURE I

District wise population and decadal growth rate of Nagaland, 2001-11

Sl.no	Name of the Districts	Total Population 2011	Percentage of District to total population	Decadal Growth rate from 2001-11
1	Dimapur	378811	19.15	22.9
2	Kohima	267988	13.54	21.7
3	Kiphire	74004	3.74	-30.6
4	Longleng	50484	2.55	-58.5
5	Mokokchung	194622	9.84	-16.1
6	Mon	250260	12.65	-4
7	Peren	95219	4.81	4.9
8	Phek	163418	8.26	10.3
9	Tuensang	196596	9.94	5.7
10	Wokha	166343	8.41	3.2
11	Zunheboto	140757	7.11	-9
12	**Nagaland**	**1978502**	**100**	**-0.6**

Source : Census 2011, Directorate of Census, Nagaland; Kohima

ANNEXURE II

District Wise Work-force of Nagaland

Name	Main Workers	Main Cultivator	Main Agricultural Laborers	Marginal Workers	Marginal Cultivator	Marginal Agricultural Laborers
Dimapur	122358	20591	4506	28992	3926	4484
Kohima	99408	38017	911	15417	6667	1287
Kiphire	25830	18450	440	6129	2982	819
Longleng	20944	16837	278	9624	5664	1031
Mokokchung	81046	42236	4863	19021	6689	4303
Mon	104981	84402	3947	42673	29071	6889
Phek	63645	44069	1311	16632	11022	1848
Tuensang	73518	57479	945	24636	17733	2968
Wokha	63512	41862	2375	14900	5611	4063
Zunheboto	49382	30738	1763	30084	13985	10192
Nagaland	**741179**	**420379**	**22571**	**232943**	**117323**	**40391**

Source : Census 2011, Directorate of Census, Nagaland; Kohima

ANNEXURE III

Village-Wise Work-force of the study area

Name	Main Workers	Main Cultivator	Main Agricultural Laborers	Marginal Workers	Marginal Cultivator	Marginal Agricultural Laborers
Kohima Sadar	38665	1314	195	3656	876	236
Kohima Village	10406	1480	176	1790	482	80
Chedema	692	287	35	596	527	41
Phek Sadar	10597	5817	63	1129	609	282
Ketsapo Village	998	915	1	4	2	0
Phek Village	1183	1029	17	248	46	197

Source: Census 2011, Directorate of Census, Nagaland; Kohima

ANNEXURE IV

AREA UNDER DIFFERENT LAND USES IN NAGALAND (IN HECTARES)

Sl. No.	Classification	2009-10	2010-11	2011-12	2012-13
1	Geographical area	1657900	1657900	1657900	1657900
2	Reporting area for land utilization statistics (i to v)	1612046	1625196	1644323	1651793
i	Forest	862930	862930	862930	862930
ii	Non available for cultivation(a+b)	89168	89470	95159	95179
	(a) Land under non-agriculture uses	86672	86974	92663	92683
	(b) Barren and uncultivable land	2496	2496	2496	2496
iii	Other uncultivated land excluding follow land (a+b+c)	139339	155439	159365	163942
	(a) Permament pasture and other grazing land	--	--	--	--
	(b) Land under miscellaneous tree crops & groves not included in net area sown	96789	103062	91930	93723
	(c) Culturable waste land	42550	52377	67435	70219
iv	Follow land (a+b)	160293	155126	147400	149520
	(a) Follow land other than current follow	101353	100301	98080	99393
	(b) Current follow	58940	54825	49320	50127
v	Net area sown (3-4)	360316	362231	379469	380222
3	Total cropped area (v+4)	481316	452471	474339	488522
4	Area sown more than once	121000	96190	94970	108300
5	Net irrigated area	72670	--	379369	88410
6	Gross irrigated area	77670	--	92040	92450

Source : Directorate of Agriculture, Nagaland; Kohima
Note : -- Not Available

State-wise Working Results of State Co-operative Agriculture and Rural Development Banks in India																						
Region/ States/UTs	(As at end- March) Amount in Rs. Crores)																					
	Number of Branches			Profit/Loss					Total NPAs					NPAs as Percentage to Loans Outstanding					Recovery Percentage				
	2007	2008	2010P	2006	2007	2008	2009	2010P	2006	2007	2008	2009	2010P	2006	2007	2008	2009	2010P	2006	2007	2008	2009	2010P
Northern Region	85	85	85	-18	6	72	61	50	981	1409	724	760	899	17	24	13	14	16	71	79	59	65	58
North-Eastern Region	39	35	35	0	1	-	-3	-3	19	17	18	16	16	64	58	59	52	52	24	23	71	53	54
Eastern Region	158	138	138	0	-2	-3	-	7.1	266	375	445	359	314	30	41	46	39	31	25	31	34	28	36
Central Region	349	349	349	-1	-122	-171	208	-50	1602	###	###	1725	###	31	40	48	39	49	41	34	70	35	37
Western Region	181	181	181	34	218	-184	-177	32	1472	814	1569	1382	1424	84	42	80	78	81	23	33	10	20	20
Southern Region	56	56	56	235	-13	42	-41	-63	1439	687	924	696	723	37	17	23	19	19	58	49	48	51	58
India	868	844	844	249	89	###	49	-27	###	###	###	###	###	33	30	35	30	33	46	44	50	40	41

Source : Reserve Bank of India (ON240)
Note : # mixed structure
: P-Provisional
: NPA -Non Performing Asset

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