REVIEW OF LITERATURE

Review of the related past research works done by the other researcher forms an integral part of the thesis. In this chapter an attempt was made to review empirical studies available in India and abroad having direct or indirect on the objective of the present investigation. The purpose behind reviewing the past studies is to assess the extent and nature of work already covered in a related field to identify the problems more accurately and to choose the most appropriate techniques of analyzing the problem.

Suresh (1991) conducted study on the impact of co-operative credit on agricultural income, in Trichur district of Kerala. Data from 168 member beneficiaries, selected from 10 PACS, were collected and analysed to show how the volume of credit services extended with to the members grown over the year and indicated the size of the credit services extended with to the members grown over the year and indicated the size of the credit gap between the availability and of demand for, funds. The rate of credit utilization was also analysed and the impact of credit utilization was considered on the relevant activities. It was reported that although co-operative services clearly played an important role in rural credit market, however, there was need to develop a better organizational managerial and technological structure for the institutions.

Vaidya (1991) conducted a study on impact of gramin bank finance on agricultural development in district Mandi (H.P). A sample size of 100 borrowing families from 5 branches of the banks was selected for the study. Assessment of household income to examine the impact of loan disbursement was made. It was found that Credit had helped most of the barrowers’ families in increasing the income and employment opportunities. Assets of agricultural and non-agricultural characters were made available to households. However there was need of credit for productive uses and effective supervision of loan for repayment.

Vaikunthe (1991) reported that the percentage of borrowing was higher in case of big farmers as compared to small and medium farmers. All the size-group in the irrigated area mostly utilized the credit for productive purposes, except a small amount which was being miss-utilized. Miss-utilized of credit was more in the non-irrigated are as compared to the
irrigated areas. Again in the non-irrigated area. The small and medium farmers misutilized credit more than those of big farmers in the irrigated area as compared to the non-irrigated area because of good returns on these farms.

Ajjan (1994) conducted a study on analysis of performance of co-operative credit institution in Tamil Nadu. The analysis revealed that the deposits, borrowing and working capital increased more than 200 per cent in all the co-operative credit institutions viz. state apex co-operative banks, central co-operative banks and primary agricultural co-operative banks. The percentage of overdues had continuously declined from 46 to about 35 per cent during the reference period. In the case of PACBs, the overdues increased to 259 per cent during the reference period reflecting poor recovery performance making most of the PACBs non-viable. This non-viability aspect was well conceived by the Agricultural Credit Review Committee which suggested a business development plan. In the long term credit institution viz., state land development bank, the share of loan issued to loan outstanding had increased to about 18 per cent during 1991-92 as against 8.79 per cent during 1882-83. The overdues of primary land development banks also increased to 18.75 per cent 11 per cent during the corresponding periods. Profitability of these long-term credit institutions had fluctuated during the reference period, a majority of them working at a loss. It was also suggested that an appropriate plan encompassing diversified activities similar to business development plan should be drawn to improve the viability of primary land development banks.

Atibudhi and Singh (1994) reported that the flow of rural credit to different categories of farmers in Cuttack of Orissa. The data were collected from a random sample of 99 farmers from two blocks of the district during the year 1992-93. To find out the extent to which credit allocation was associated with certain farm characteristics, the Gini index of concentration was worked out. A comparative picture of credit distribution according to farm characteristics indicated that the marginal farms constituted 44.44 per cent of the total sample and owned 20.75 per cent of the land. The small and large size farms constituted nearly 34 and 21 per cent of the total sample farms and owned 38.67 and 40.58 per cent of the total land held by the farmers of sample farms respectively. Of the total credit advanced, the marginal, small and large farms accounted for 19.26, 38.51 and 42.23 per cent respectively. On the other hand, comparison of the allocation of credit in respect of other farm characteristics like farm assets, farm expenses, gross farm output, etc,
revealed that credit allocation was almost based on proportion and the resources held by the farmers of each size group of farms.

**Gupat et al. (1998)** observed that beneficiary farmers received a sum of Rs 50206.00 as loan mainly for paddy crop. The net profit per hectare for paddy on the beneficiary farm came to Rs 5258.00 against Rs 4574.00 on the non-beneficiary farms. It was concluded that the beneficiary farmers had utilized not only the loan amount but also earned a significantly higher profit per hectare than those of non-beneficiary farms for all the crops for which the loan was obtained from the co-operative banks.

**Sidhu, and Goyal (1998)** conducted a study on institutional agricultural credit in Punjab: growth, equity, and adequacy. The study showed that the institutional agricultural credit increased 20 times from 1970-71 to 1995-96 at current prices. At 1970-71 prices the availability of institutional credit per cropped hectare increased from Rs.150 in 1970-71 to only Rs. 243.6 In 1994-95. The growth in production credit was inadequate where’s investment credit was found to be growing satisfactorily commensurate with capital requirements of the agricultural sector.

**Arene, C,J,(1999)** reported that the paper examines the various methods of local sanctions in use for loan recovery by community banks in the area (of Anambra and Enugu states, Nigeria); and analyses the effects of these local sanctions on agricultural loan recovery by the system. Data were gathered from 60 farmers (30 farmers from each of two banks) during 1997.

**Al, Karaki, M, A; et al, (2000)** reported that this study analyses factors affecting the demand for credit provided by the Agricultural Credit Corporation (ACC) in Jordan under conditions of risk and inflation. Data were obtained through a field survey conducted during the period June-November 1998 in which 100 farmers distributed over the regions served by the corporation were interviewed. Additional data were obtained from formal and informal sources. The study indicates that the corporation plays a crucial role in providing farmers with credit. The value of its credit over the period 1960-97 was JD 219 million, which was given to finance projects such as constructing and improving rain fed and irrigated areas, animal husbandry, poultry, agricultural industrialization and mechanization and production inputs. Based on trends in loans over the period 1985-97, it is anticipated that the value of loans provide by the corporation will increase until it
reaches JD 21.8 million in 2005 (1.27 time that extended in 1997). The study reveals some factors considered important in farmer willingness to borrow from the corporation. These factors include the farmer’s age size of household, farming experience and size of utilized holding.

Arouselvam and Zeaudeen (2000) conducted a study on agricultural credit in Villianur block of Pondicherry region. In case of long term loans, the marginal and small farmers obtained it only for irrigation purpose alone and not for purchase of tractor or land. The repayment was regular for crop loans, since the farmers need the credit for the next season. Hence, the payment was regular and complete. But in the case of long term loan there were huge amount of outstanding. Most of the borrowers were willful defaulter. This was a bad behavior, which will ultimately destroy the entire farming community. Hence steps should be taken for proper and regular repayment of the long term loans by the farmers, which alone can bring healthy situation for supply of long term loans.

Chaudhary et al.(2001) conducted a study on problems in crop loan utilization and repayment behavior in village Bandrana of Kaithal district of Haryana. It was observed that 63 per cent of the borrowers had fully utilized the loan out of which, 73.68 per cent of the borrowers belonged to the large farm holders while 68.18 and 58.63 per cent of the respondent belonged to medium and small farm, respectively.

Das and Das (2001) analyzed the repayment behavior of 200 borrowers of the Arunachal Pradesh (India) for state co-operative bank Ltd. The period of study was 1994/95-1998/99. It was observed that defaulters were mostly those who obtained loan for livestock production, and loan was amount in adequate i.e. of loan (up to Rs 1000). Reasons for non-repayment of loan included, failure of the crops, low earnings of borrowers, difficulty for reaching to the bank, diversion of loan and willful default.

Galarza and Alvarado (2001) reported that this article presents six cases of financial organizations in Bolivia and Peru, showing best financial performance with most technology relevance and which had a rural concern in 1998. They vary in size with regard to the amount of money being given in loans, bank balance (US$ 623 000-20 million) and number of clients (407-47 000). Two financing categories are included, leasing and linking. The leasing type is a programme by one
of the most important Bolivian micro financial organizations and constitutes a creative mechanism for financing of farm machinery for small farmers. The linking type includes 2 innovating Peruvian cases, bank-NGO-farmer and bank-business-farmer. Both types of financing showed good financial performance and gave a total rural balance of US$ 240 000 (leasing) and 3.2 million (linking). Details are given of what is covered, the scope, costs for clients, limits, depth and duration for each programme. It was concluded that the Bolivian cases, and at a smaller scale the Peruvian cases, showed that it is possible to attend the low income rural population in a sustainable way. The important requirement for such expansion is greater specialization in micro financing, more training of credit personnel, and better knowledge of applicable technologies in rural areas. Few organizations in Peru were prepared to offer financial services to rural areas because the technologies used did not permit risk and cost reduction. The quality of services offered and the serious image of the organizations were crucial for clients to decide to establish contact with the lenders. Regulation was an important factor to promote expansion of coverage of loan. The sustainability, operational effectiveness, profitability, solvency, and subsidies of the cases presented are discussed. The importance of technology used, structure of incentives and organizational design to improve the coverage and sustainability of financing is also discussed. It was shown that to reach a compatible combination between coverage and sustainability, it is necessary to have good competitive personnel and know-how accumulated over the years, which secures good financial results and efficient administration of resources. All cases studied increased their coverage with an increase in profitability and auto sufficiency. All showed expansion of more than 35%.

Singh et al. (2001) conducted a study on performance of primary agricultural credit societies in Milkipur block Faizabad district of Uttar Pradesh to assess its progress and recovery position. The results of analysis highlighted a continuous in the membership and share capital of the societies during the study period. Short-term loans disbursed to the members did not indicate any specific except for a decline during 1997-99. The recovery of loan was 76 to 96 per cent, indicating the share of previous year’s overdue. The study has suggested the need to encourage members to make timely repayment of the loan taken, to extend
recovery of loan in case of crop failure and to write off a portion of loan in distressed cases.

*Acharjee et al. (2002)* reported that the impact of agricultural loons made available through the integrated Rural Development Programme (IRDP), on the income of programme beneficiaries in Haringhata block, West Bengal, India, was examined. Land holding, social participation, knowledge of block personnel, dwelling pattern, and material possession had a significant influence on the IRDP beneficiary.

*Bansal et al. (2002)* conducted a study on performance of primary agricultural co-operative credit societies in Haryana and Punjab states based on the secondary data collected from the various published sources for the period 1991-92 to 2000-01. The study reveals that the number of societies, membership, amount of deposits, paid-up share capital, borrowings, working capital, loan outstanding, loan advanced, and cost of management, overdues and profit had increased over the study period. The number of PACS working at profit had increased in Punjab and decreased in Haryana during the study period. The deposits had increased significantly over the period. Negative value of delinquency rate shows the amount of overdues had shown an increasing trend outstanding but the amount of overdues had shown an increasing trend, which was not a good sign for progress of these societies.

*Kaur, et al. (2002)* conducted a study on role of various sources of agricultural credit based on data collected from a random sample of 100 farmers from four villages in two selected blocks in Sangrur district of Punjab. The farmers were stratified into small, medium and large farms by using the cube root method and the information regarding credit acquisition, its use, sources and purpose etc, was collected by using the survey method. The result of the results of the study showed that small farmers were leading in acquiring per hectare credit (Rs 98,409), followed by medium (Rs 39,006) and large (Rs 23,388) farmers. As a percentage contribution from institutional sources, the medium farmers were leading with a share of 48.99 per cent, followed by small (45.97) and large (42.06) ones. In case of non-institutional source, large farmers accounted for 57.94 per cent, followed by small (54.03 per cent) and medium farmers (51.11 per cent). Source wise, the credit advanced by deferments institutions the land development banks had advanced highest, being Rs 6,896 per hectare, followed by co-operative (Rs 5,891) commercial banks (Rs 3,053) and regional rural banks (Rs.348). However in the case of
non-institutional sources, the farmers received the highest per hectare credit, from commission agents (Rs 12,288), followed by money lenders (Rs 6,197) relatives and friends (Rs 1,647). As regards, the use of credit, 19.86 per cent of institutional loans and 13.22 per cent of non-institutional loans were diverted from specific purpose to other uses. However, the diversion of per hectare credit was the highest in case of small farmers (Rs 19,221 followed by medium (Rs 2,225) and larges (Rs 1,573) farmers

Sarkar, and Dodkey, (2002) reported that the Kisan Credit Card (KCC) scheme, an innovative credit delivery mechanism for farmers in India. Relevant issues relating to the implementation of the KCC scheme are discussed. Also discussed are the credit transactions under the KCC scheme, its impact on crop yields, and the repayment performance.

Samal (2002) reported that in India from time to time conscious efforts have from time to time conscious efforts have been made to expand credit to agriculture and other rural nonfarm sectors by strengthening the rural credit delivery structures with new institutions co-operative bank commercial banks and regional rural banks were opened to improve access of credit to the weaker sections. With a view to improving the flow of credit to the rural poor private sector local area banks covering two to three contiguous districts has been set-up however the approach to strengthening rural credit structure with new institutions has often been questioned. It has been argued that restructuring of rural credit system by way of reshuffling or adding new entities and making some changes have and there may not help to remove the ills of the rural credit system.

Saikia and Bora (2002) reported that a study on role of institutional finance for development of cash in Batadrwa and Khagarijan blocks of Nagaon district covering 75 credit recipients (CR) and 30 non-credit recipients (NCR) house –hold with the objectives to study the availability and use of credit and impact on area expansion income and employment. Institutional sources provided the highest credit of 28 per cent to small followed by 28 per cent to medium 25 per cent to large and about 19 per cent to marginal farmers. Non-institutional source provided the highest credit of 39 per cent to marginal farmers. Per farm credit had inverse relation to farm size. Current farm expenditure covered 70 per cent and capital expenditure accounted for about 30 per cent of credit utilization. The impact of credit was
significant in area expansion for boro rice (by 71 per cent), vegetables (75 per cent) potato (75 per cent) and oilseeds (34 per cent). Additional employment of about 84 mad - day per farm was created. Net income and operating cost ratios were higher for all the cash crops except jute in (CR) farms over net cost.

*Mamata- Swain (2003)* reported that the study reveals that small size of land ownership holding, land fragmentation, poverty of the farmers, low use of fertilizer, traditional method of production, lack of credit, storage and marketing facilities are the most important reasons for low agricultural productivity observed in the study area. It is suggested that the marginal and small farmers should pool their resources and undertake joint farming, form self-help groups and set up marketing and credit co-operatives. Dissemination of knowledge on improved agricultural practices should be undertaken through effective extension service. Farmers should be motivated to cultivate remunerative cash crops in accordance with the soil type and water availability. For improved water delivery and its optimum utilization in the study area on farm development works should be expanded and properly maintained.

*Sanjeev (2003)* reported that the importance of product innovation in rural financing institutions, based on the experience of the Orissa (India) State Cooperative Bank. This bank was the first in the country to introduce the Kisan Credit Card scheme for the disbursement of loans.

*Singh and Kumar (2003)* reported that farm credit is one of the essential requirements for the growth in agricultural production and productivities. In order to make available this credit at affordable rates many policies including nationalization of banks scheme establishment of NABARD etc, were formulated. However in the low crop security areas the availability of institutional credit still remains a problem.

*Virk et al. (2003)* conducted a study on agricultural credit repayment behavior of Punjab farmers. The finding of this study reveals that in cooperative banks and co-operative agricultural service societies, all the respondents repaid in lump sum. In the case of commercial banks large majority of respondents repaid the loan amount in installments. All the respondents who repaid in lump sum mode, repaid fully and timely, and of the respondents who repaid credit in installments 65.79 per cent
repaid fully. Finding indicates that 46.40 per cent respondents felt that the interest was high in commercial bank and 53.60 per cent said it was reasonable. From the total 200 borrowers, 83 borrowers credit for tractor, out of which 2.41 per cent repaid from the income of tractor on rent plus crops production. The main source of income for repayment was crop production and funds generated by productive end use of credit.

_Sahu et al (2004)_ reported that the literature on the rural credit market in India (and elsewhere) has generally assumed that peasant farm households are rationed in their access to subsidized formal credit. Because of a lack of infrastructure and poor access to institutional credit, such farmers are exploited by means of an interlocked market connecting informal credit to the sale of paddy. The resulting gap, between the sale by a borrower of paddy at a predetermined low price, and the price of this commodity on the open market, constitutes the amount of what is termed a distress sale. The latter is itself influenced by the bargaining capacity (or lack thereof) of the peasant farmer who borrows on the informal market. Also of importance in determining whether or not a cultivator is compelled to resort to the informal credit market (and thus into an interlocked arrangement) is the need for additional liquidity to meet production costs and/or household consumption, as well as the monophony nature of the paddy market. Data from Kalahandi district in Orissa for the kharif crop in 2001-02 suggest that access to formal credit is limited in rural areas although there exists a high demand for it, that a high degree of credit rationing by the formal lender occurs, and that poor implementation by the state of minimum support price policy all contribute to the need for informal loans and its attendant interlink age.

_Aswasirilert (2005)_ reported that a structural analysis of capital costs, operating costs and costs of uncertain debt. Wholesale lending to cooperative groups had cheaper transaction costs but greater risk from competition. As BAAC is constrained in the cost of capital by fluctuations on the money markets, it should control all the costs it can such as salaries and allowances and increase efficiency by reducing complexity of procedure. It must adapt to support community enterprises and village funds so they can be more competitive.
Deorukhakar, et al. (2005) examined the impact of institutional credit on cost, returns and profitability in the north Konkan region of Maharashtra state. A sample of 120 borrowers and 120 non-borrowers was selected randomly from twelve villages of four selected tehsil of Thane and Raigarh district of north Konkan region. The analysis revealed that the cropping intensity on beneficiary farms was higher than non-beneficiary. Area under irrigation was also more on the beneficiary farms than non-beneficiary. The borrower farmers’ availed loan to the extent of Rs .10076 per farm. Per farm loan amount increased with increase in the size of holding. Regarding size group wise disbursement was observed that maximum crop loan was taken by large size group followed by medium and small group. A similar trend was observed for other purpose of loan. The per farm income and profit on beneficiary farms was higher than non-beneficiary farm. The farm business income, which represents the profit for direct cost for beneficiary farmers, was four times than that of non-beneficiary farms. There was showed that crop production was profitable on beneficiary farms. The effect of short –term loan in the production process was found to be significant on all size groups. The results had Cleary demonstrated that there was positive impact of agriculture credit on per hectare yield of different crops. Thus the flow of farm credit had resulted in improving the economy of the borrower farmers.

Joshi et al. (2005) conducted a study to estimates the loan position and magnitude of various categories of farmers in the states. Ti also worked out the gap in requirement and availability of finance for crop production in the Punjab states. The data was related to the agricultural year 1999-2000. It was collected from 220 farm households in the state pertaining to different farm size group. The study revealed that the major component of the total loans was comprised of crop loan covering about three-fourth of the total loans taken in Punjab agriculture. Commercial banks played a major role in financing loan which was followed by co-operative and moneylenders. So for as the gap between requirement and loan availability is concerned about 29 per cent of the amount falls short of loan requirement. There was direct relationship between loan required and the farm size. The farmers who were unable to repay loan increased their indebtedness over time. The study concluded that there was need to redirect the commercial banks to extend loan facilities liberally to the small farmers. This would pave the way for lessening the role of
non-institutional agencies and thus help the farmers to escape from the clutches of the money lenders.

*Krishna and Chowdry (2005)* examined that the performance of three co-operative societies one each in Guntur, Nizamabad and Anantapur districts of Andhra Pradesh from the viewpoint of assessment of the repayment behavior of the farmers. The study found that the many reasons which weighed in favor of functioning of the societies included regularity in repayment the desire to get further loans, better yield remunerative price additional income from other sources and desire to be prompt and honest. Under single window system, repayment consciousness was developed among farmers. Income of farmers increased with the introduction of single window system which resulted in improvement in repayment capacity of farmers. However, the three PACs were beset with various other deficiencies. Majority of farmers were found to be highly irregular in the payment of installments of loans due fall in prices of lower prices for agricultural commodities, short time limit for the problems repayment of loans, pressure for clearance of old debts and crop failure were some of the other problems cited for irregular repayment of loans. Provision of extension services and input supply and also fair prices by reducing the share of middlemen and state market intervention, agricultural diversification including livestock and non-farm sector services and finally, formulating suitable policy to face the problems of drought, floods, etc., are the some of the measures suggested to reactivate these inefficient societies over time.

*Kushwaha, et al. (2008)* reported in their study that, farmers in Sub-Saharan Africa and Asia are vulnerable to credit shock during crop cultivation which make them handicap in practicing intensive agriculture. Credit slack leads towards low adoption on improved technology and leave them with low productivity. While eight per cent farmers across the globe are using Genetically Modifide (GM) crops, 78 per cent farmers in developing country are struggling to arrange sufficient level of required crop production variables. Among many essential factors of production, agriculture credit is one of the most decisive factors responsible for high adoption and leads towards sustainable agricultural development. Agricultural production has become less remunerative in developing countries and generating emotional shock among the farming community.
A general overview is presented of the agricultural credit scenario in India, along with the innovations in the rural financial system, and the extent of farm indebtedness. Various issues are reviewed, including: the flow of agricultural credit; credit use by size of holdings; the impact of credit on income, employment and poverty; loan repayment, overdue and causes of default; credit diversion; cost of credit; microfinance; the Kisan Credit Card scheme; and the structure and factors determining indebtedness.

Mishra (2005) conducted a study on “impact of institutional finance on farm income and productivity in selected farms in Baliana block of Khurda district of Orissa,” Using two stage random sampling method a sample size of 40 borrowers and 40 non-borrowers were selected for the purpose of study. Multiple regression analysis was employed to study the impact of institutional credit for increasing output at the farmer’s level. The results revealed that among all the institutional agencies the role of co-operatives was quite commendable having the share of 39.53 per cent followed by commercial banks 19.83 per cent and regional rural banks with 6.91 per cent. The small and large farmers were relatively the most important outlets borrowing about 75 and 81 per cent of the total finance. Further, it was evident that out of the total borrowings crop lone constituted 68 per cent as against of 32 per cent by term loan. The crop loans were Rs. 2,251, Rs. 2066 and Rs.1, 788, respectively. Thus for long farmers borrowed less short term and more long term credit per has as compared to the marginal farmers who borrowed more short term credit. It was observed that 20.38 per cent of the short-term credit and 20.55 per cent of long term credit were diverted for unproductive purposes. The results of the regression analysis was revealed that the credit financed input and percentage of were statistically significant at the aggregate levels for borrowers and self-financed variable inputs and percentage of were under high yielding varieties in case of non-borrowers. The study further revealed that the increase in yield of borrowers farm was due to use of credit financed inputs.

Makar, Ghosh (2005) reported that this study was conducted to determine the role of institutional credit for agricultural revolution in tribal hill areas based on a study in Nagaland, India, and identify the problems and solutions in this area. It is suggested that land records should be designed in such a way that an individual farmer can avail the credit facility for agricultural production. At the same time,
the organized financial institutions have to think of liberal outlook so that more and more self-employment and entrepreneurial prospects are credited in agriculture and allied activities.

Okerenta (2005) reported that twenty formal and informal financial institutions and 300 farmer-beneficiaries that operate in Rivers State, Nigeria, were randomly selected and structured questionnaires, as well as a personal interview schedule, were administered to them. Both primary and secondary data were collected for the study. The primary data were obtained through a sample survey of the formal and informal financial institutions and the farmer beneficiaries of their services. Descriptive statistics as well as Kendall coefficient were used to analyse the data. Determinants of agricultural credit provision to farmers in Niger Delta were ranked on a five-point scale, from extremely important to extremely unimportant. Kendall's Coefficient of Concordance was used to test the degree of association of the financial institutions' rankings of the identified militating factors. Similar weights were not attached to the influencing factors, thus resulting in no significant agreement among the financial institutions in their rankings of the militating effects of each factor. It therefore means that there is no consensus among the financial institutions as to the observation that the identified factors influence the choice of enterprises funded by them.

Okerenta Orebiyi (2005) reported the effective administration of agricultural credit, financial institutions while granting credit to farmers for agricultural purposes consider a number of factors. This paper focused on the evaluation of the critical factors that are considered by financial institutions in disbursement of credit to farmers in the Niger Delta area of Nigeria. Data for this study was collected from 20 formal and informal financial institutions operating in the study area. They were randomly selected and structured questionnaires were administered to them and interview schedule. The determinants of credit supply for agricultural purposes were found to be profitability of the investment, level of assets of the farmer-borrower interest rate, availability of credit, loan transaction costs, and level of risk bearing. Results show that the availability of credit was considered an extremely important factor in the supply of agricultural credit to farmers. However transaction costs was
observed to be the least important factor considered by financial institutions in order to supply credit to farmer in Niger Delta area of Nigeria.

Pandey et al. (2005) conducted a study on borrower’s behavior and indebtedness in rural Hisar, Haryana. Cross section data of 70 borrowers of co-operative mini banks and Hisar, Sirsa kshetria gramin banks of Hisar district, with the following objectives: (i) to study purpose wise the share of institutional and non-institutional loans borrowed (ii) to examine the loans outstanding, overdues and extent of loan diversion across categories of borrowers/defaulters, (iii) to ascertain the social factors responsible for borrowing of institutional and non-institutional sources. The non-institutional loans were costlier followed by co-operative and kshetria gramin bank. However, the real cost credit relatively declined as size of operational land holding increased. Loans overdue were highest in kshetria gramin bank due to large sizes of medium and long loans followed by co-operatives. Both small and large farmers diverted the production loans for non-productive purpose. Lastly non-institutional source of loans were still prevalent in the region in spite of the fact that institutional sources were cheaper.

Shivappa (2005) reported on the basis of both secondary and primary data collected by survey method regarding. The credit utilization pattern and its repayment performance of the borrowers in Chitradurga Gramin banks of Pallagatti branch in Davangere district of Karnataka. The Pallagatti branch is purposively selected for study due to accessibility to data and familiarity with its service area and the bank personnel. The analysis of data revealed that in 2001-02 the bank had advanced Rs.1.32 crores which increased to Rs.1.89 cores in 2004-05. About 75 percent of the sample borrowers had borrowed funds from gramin banks as well as from private agencies. The remaining 25 per cent had borrowed only from gramin bank. The delay in renewal of loan under lending and non-availability of loan for domestic purpose from RRBs forced the farmers to depend on private sources. About 28 per cent of the total sample beneficiaries had used the whole credit in farm expenditure while the remaining 72 per cent had partly used in farm expenditure and diverted partly for other purpose. The credit recovery of the bank was 85 per cent in 2001-02, which decreased to 73 per cent in 2003-04. Failure of crop due to drought had reduced the credit recovery and increased the overdue. Only about 78 per cent of the total respondents had repaid loan in time. Desire for getting enhanced loan in future, legal and moral duty to repay loan, persuasion by banks personnel, minimization of loan burden,
better yield etc., were the major factors responsible for regular repayment. Non-repayment of loan in time were due to crop failure, low yield, low income, difficult to repay the whole loan and interest at a time, heavy domestic expenditure and un remunerative price.

**Shukla and Singh (2005)** conducted a study of Kanpur kshetrya gramin bank broadly aims to the impact of working of regional rural banks on rural economy. The KKGB was established in February 1980. The area of bank operation was Kanpur nagar and Kanpur dehat. Overall the RRBs had shown satisfactory performance in terms of providing loans and in generating employment opportunities in study area.

**Singh and Sekhon (2005)** reported that the Kisan Credit Card (KCC) aims at adequate and timely support from banking system to the farmer, to meet the credit needs of crop production and ancillary activities the cropping intensity and RFFR exhibited positive relationship with the farm size 200201.98 and 201.64% and Rs. 34,896,44, Rs 43,75,68 and RS 44,635,20, per hectare for the small medium and large respectively on the other hand credit gap sanction was inversely proportional to the size i.e. 2.32, 20.36, 23.90 for the small medium and large farms respectively. As many as 73% of the Kisan Credit Card (KCC) beneficiaries where satisfied with the present cost of the accessing the Kisan Credit Card (KCC) limit all the constraint in the working of the Kisan Credit Card (KCC) where to many intermediaries in obtaining the suitable securities and finding the guarantor. The entire farmer was quite satisfied with the attitude of the loan officers.

**Vaikunthe (2005)** conducted a study on structure, membership and their socio-economic profile; crop loan availed by the primary agricultural credit societies for farming and non-farming operations in Shimoga district of Karnataka. The study was based on survey of 100 crop loan beneficiary of 5 taluks of Shimoga district. The crop loans were advanced by SDCCB through five PACSs in the respective talukas. The study had focused only on four talukas, viz. Shimoga, Sagar, Thirthahalli and Hosanagar. The results of the study indicated that the average utilization of crop loan was higher in the irrigated area in Sagar, Hosanagar and Thirthahalli talukas compared to loan utilization in the other categories of maximum for crop loan on beneficiary’s farm in the four talukas had been positive in the post-investment period as compared to per investment period.
Hatai et al. (2006) conducted study on “Agricultural credit and overdues in Uttar Pradesh”. Agricultural credit has always become an important component in the production process. An attempt was made to analyse the availability and utilization of credit and to identify the causes and determinants of overdues. Multi-stage random sampling technique was used. It was observed that on marginal farms the crop loan share was about 61 and 74 per cent in the west zones, respectively. Crop loan had inverse relationship with the size of holding; where as there was positive relationship between the term loan and the size of holdings. More than 80 per cent of credit was used for productive purposes and rest for unproductive purposes. Major reasons indentified for willful default were slackness in timely recovery by bank followed by diversion of income for purchasing land and other property and uncertainty about fresh loans in both the zones, while low crop yield and failure of crop due to natural calamities, inadequate finance were the main reasons of non-willful default in both east and west zones. The financial institution should advance the loan after assessment of the credit requirements. Efforts should be made to supervision of loan to overcome the problems of overdues in agriculture.

Meulen, et al (2006) reported that by means of a quick scan, this research describes the role of the Agricultural Loan Guarantee Fund (BF) instrument for Dutch agricultural entrepreneurs in its current form and within the current market situation. In this, account was taken of the general trends in the sectors that are important for the BF, the current BF decree, indications providing insight into the importance of the instrument, the financing policy of banks and the role of the BF, and the idea of possibly using the BF to stimulate innovation. The description is based on data from LEI's Farm Accountancy Data Network, data from the Agricultural Loan Guarantee Fund foundation, and interviews with experts from banking practice.

Namboodiri (2006) reported that a wide range of issues on agricultural credit and indebtedness came up for discussion before the group. They were classified under five sub-themes in order to have clarity and better understanding of the issues. They were major concerns on flow of agricultural credit at various level; structure and factors determining indebtedness; the emergence of microfinance and Kisan
Credit Card (KCC); loan repayment and credit diversion; and finally various issues on the cost of credit.

Wilson, et al (2006) reported that this article examines the hypothetical responses of agricultural lenders to hypothetical loan requests from farm borrowers. A survey of 118 and 61 agricultural lenders from respective financial institutions in Kansas and Indiana, showed that each loan request differed by the borrower's character, financial record keeping, productive standing, Fair Isaac credit bureau score, and credit risk. Lenders provided information about themselves and their financial institutions. Tobit models are estimated to identify the borrower and lender characteristics that are important in determining loan approval while OLS models are used to investigate the factors that affect interest rates offered to farm borrowers. It is suggested that the findings from this study, provide lenders with insights on the factors that influence the decision-making process of other agricultural lenders.

Awasthi (2007) reported the effect of the short term credit on the value of agricultural output on per hectare basis has been statistically significant throughout the period of analysis (1981-2001) but the extent of change which it has caused on the value of agricultural output is much low as compared to the significant impact of term loan.

Ray (2007) reported that the credit availability from both institutional and non-institutional sources has made a significant contribution on the change in cropping pattern. But the impact of credit availability on cropping pattern change has been more significant in case of smaller size of land holding.

Featherstone, et al (2007) reported that is Agricultural lenders in today's environment face many challenges when evaluating the creditworthiness of farm borrowers. To address these challenges, a survey was conducted in 2005 with financial institutions in Kansas and Indiana where agricultural lenders were asked for their responses to hypothetical agricultural loan requests. Each loan request differed by the borrower's character, financial record keeping, productive standing, Fair Isaac credit bureau score, and credit risk. In Kansas, 106 responses were received from commercial banks, and 12 responses from the Farm Credit System.
In Indiana, 52 usable responses were returned from commercial banks and 9 were received from the Farm Credit System. Lenders provided information about themselves and their financial institutions. The survey data obtained determine the relative importance of financial and nonfinancial information when analyzing agricultural loan applications. Tobit models are estimated to identify the borrower and lender characteristics that are important in determining loan approval, while OLS models are used to investigate the factors that affect interest rates offered to farm borrowers. The results offer a comparison of agricultural lending between two important agricultural states and provide lenders with insight on the factors that influence the decision-making process of other agricultural lenders.

**Kumar, et al (2007)** reported that the use of credit card showed a positive relationship with the size of land holding. The percentage of card holder using Kisan Credit Card scheme (KCCs) was 35 among small farm households 81 among large households. The high popularity of Kisan Credit Card scheme (KCCs) in a short span of time veiled that the rural households do not shy away from availing credit because of interest rate only but because of cumbersome procedure of lending by formal credit institutions under other scheme.

**Bhaskaran, (2008)** reported that the small farmers do not have the financial strength to meet working capital or investment needs. A farmer needs credit/fund support. It seems that the credit products offered by the banks are one size fits all. The list of measures introduced by the central and state government, regulators and supervisors, the Reserve Bank of India and NABARD, to mitigate the various risks that a farmer or a rural non-farm worker/unit faces include minimum support price (SAP for sugarcane farmers), farm income insurance, credit guarantee, general insurance, crop insurance, subsidies, waivers, interest concessions, one time settlements, rescheduling/conversion of loan installments/payments, etc. However, looking into the long history of difficulties encountered in servicing agricultural loans and the fact that series of measures that have been taken did not have a significant impact on reducing the distress, it is apprehended that the loan product may not be appropriate. The bank loan with risk cover and convenient repayment schedule will be suitable for small and big farmers.
Loganathan, (2008) reported that the Kisan Credit Card (KCC) scheme started by the Government of India in consultation with the Reserve Bank of India and the National Bank for Agricultural and Rural Development in 1998-99. The scheme was introduced to provide adequate and timely support from the banking system to the farmers for their cultivation needs including purchase of all inputs in a flexible and cost-effective manner. Under the scheme, banks may provide the KCCs to the farmers who are eligible for sanction of production credit. Up to 2002-03, the scheme was actively functioning but turned sluggish thereafter. More than 3 corers of farmers have benefitted from the scheme and these benefits could be extended to other farmers in the coming years.

Noor, and Mohsin, (2008) reported that the effects of agricultural credit on farm productivity and the income of the small farmer as a result of credit provided by Zarai Tarraqiati Bank of Pakistan was conducted in district Peshawar of NWFP Pakistan in 2006 at Institute of Development Studies NWFP Agricultural University Peshawar. For this purpose, a total of 120 respondents (60 from beneficiaries and 60 from non-beneficiaries) who obtained agricultural credit from ZTBL were randomly selected from three sampled villages. 51.66% of the total beneficiaries obtained medium term while 41.66% obtained short-term credit and 8.33% got long-term credit from ZTBL. The data were collected through a pre-tested interview schedule. Farming was the main occupation of all the respondents. The result reveals that the credit advanced by ZTBL in the study area has made positive effect on the area of wheat and maize. However, no effect is recorded on the area of peaches and pea. The result shows a significant change in wheat and maize production.

Nilakantha, (2008) reported that An Indian government announcement says that agricultural loans (including interest) to farmers cultivating up to two hectares (or about five acres) of land given by cooperative credit societies and commercial banks that were outstanding on 31 March 2007 shall stand written off. Only 25 per cent of the total outstanding agricultural loans to farmers holding more than two hectares of land on that date shall be written off. This paper discusses the likely fallout of this move. The loan waiver will lighten the debt burden of the farmers, but it is argued that in the long term this will adversely affect the rural
credit institutions that extend loans to farmers. It is pointed out that it is a mistake to think that writing off loans at one go can be a single step solution for preventing and fighting cases of farmer suicides.

Sidhu et al (2008) reported that the demand –supply situation in terms of short-term institutional credit has undergone a change over time with the demand exceeding supply by 49 percent in 1995-96 but later the supply has been found exceeding demand by 122 percent in the year 2005-06.

Satyasai (2008) reported that in view of the importance of rural credit to agriculture and rural development this examined a few structural constrains that hamper the credit delivery and has discussed some of the measures taken to improve the situation.

Udoh, (2008) reported that this paper analyses the extent of default among beneficiaries of government sponsored loan scheme. The loan performance indices estimated reveal that over 75% of the loans disbursed by AKSALB in the period under review were still held by 59 percent of the loan beneficiaries. This situation is an indication of high level of loan defaulting among the benefiting farmers. Certain personal and facility factors are estimated to determine the probability of default among the beneficiaries. Notably among these include sex, household size, farm size, loan from other sources, primary occupation of the beneficiary, time lapse between loan application and disbursement, total farm expenditure and duration of the granted loans. With such high level of default, the Board outreach and sustainability capacity is questionable thus putting a caveat on the relevance of the Board as agricultural micro financing institution.

Gine, and Yang, (2009) reported that does production risk suppress the demand for credit? We implemented a randomized field experiment to ask whether provision of insurance against a major source of production risk induces farmers to take out
loans to adopt a new crop technology. The study sample was composed of roughly 800 maize and groundnut farmers in Malawi, where by far the dominant source of production risk is the level of rainfall. We randomly selected half of the farmers to be offered credit to purchase high-yielding hybrid maize and groundnut seeds for planting in the November 2006 crop season. The other half of farmers were offered a similar credit package, but were also required to purchase (at actuarially fair rates) a weather insurance policy that partially or fully forgave the loan in the event of poor rainfall. Surprisingly, take-up was lower by 13 percentage points among farmers offered insurance with the loan. Take-up was 33.0% for farmers who were offered the uninsured loan. There is suggestive evidence that reduced take-up of the insured loan was due to farmers already having implicit insurance from the limited liability clause in the loan contract: insured loan take-up was positively correlated with farmer education, income, and wealth, which may proxy for the individual's default costs. By contrast, take-up of the uninsured loan was uncorrelated with these farmer characteristics.

Pederson, and Zech, (2009) reported that the agricultural lenders can implement a credit risk model that uses their loan portfolio data and complies with the new Basel Capital Accord without requiring Merton-type model assumptions about underlying asset price volatility. A credit risk model is described and calibrated to the loan portfolio of a farm lender. The model is used to produce plausible estimates of expected loss, unexpected loss, and credit value-at-risk (VaR) at the portfolio and sub portfolio (sector) levels. The lender could use these kinds of estimates to meet regulatory requirements or to adjust the level of capital in response to changing economic conditions.
RESEARCH METHODOLOGY

This chapter deals with methodology and details of sampling technique that are as under.

Sampling technique:

For the present study entitled “ROLE OF KISAN CREDIT CARD SCHEME ON AGRICULTURAL DEVELOPMENT IN ALLAHABAD DISTRICT UTTAR PRADESH” A multistage stratified sampling procedure was adopted to select the sample.

<table>
<thead>
<tr>
<th>First Stage:</th>
<th>Selection of District</th>
<th>Purposive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Stage:</td>
<td>Selection of Bank</td>
<td>Purposive</td>
</tr>
<tr>
<td>Third Stage:</td>
<td>Selection of Blocks</td>
<td>Purposive</td>
</tr>
<tr>
<td>Forth Stage:</td>
<td>Selection of Villages</td>
<td>Random</td>
</tr>
<tr>
<td>Fifth Stage:</td>
<td>Selection of Respondent</td>
<td>Random</td>
</tr>
</tbody>
</table>

Selection of District:

Selection of the district formed the First stage of sampling. Allahabad district of Uttar Pradesh was selected purposively for the present study and also the Allahabad districts have large number of Kisan Credit Card holders.

Selection of bank:

Selection of the bank formed the second stage of sampling. The Regional Rural Banks was purposively selected as there is large number of Kisan Credit Card holders in Allahabad district in Uttar Pradesh as compared to other banks.

Selection of block:

Selection of the block formed the third stage of sampling. A complete list of 20 blocks was obtained from district Headquarter. Out of 20 blocks, two block, namely Chaka and Jasra were selected purposively.
Selection of village:

Selection of the villages formed the fourth stage of sampling. A complete list of all the villages of both blocks were obtained from the block development office of the concerned block, and then villages were arranged in descending order on the basis of Kisan credit card holder.

Table 4.1 List of Selected Village

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of selected villages</th>
<th>Random No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSARA BLOCK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i.</td>
<td>Manakwar</td>
<td>IV</td>
</tr>
<tr>
<td>ii.</td>
<td>Budhawan</td>
<td>I</td>
</tr>
<tr>
<td>iii.</td>
<td>Ambriha</td>
<td>VII</td>
</tr>
<tr>
<td>iv.</td>
<td>Simra Kalbana</td>
<td>V</td>
</tr>
<tr>
<td>v.</td>
<td>Iradaganj</td>
<td>I</td>
</tr>
<tr>
<td>CHAKA BLOCK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i.</td>
<td>Dabahan</td>
<td>VI</td>
</tr>
<tr>
<td>ii.</td>
<td>Dandi</td>
<td>III</td>
</tr>
<tr>
<td>iii.</td>
<td>Amilia</td>
<td>VIII</td>
</tr>
<tr>
<td>iv.</td>
<td>Dhanaua</td>
<td>X</td>
</tr>
<tr>
<td>v.</td>
<td>Chandupur</td>
<td>I</td>
</tr>
</tbody>
</table>
Selection of Respondents:

Selection of the respondents formed the fifth stage of sampling. A list of Kisan Credit Card scheme members from Regional Rural Banks were collected from bank records and non Kisan Credit Card members obtained from the village Pradhan and Lekhapal. Then they have arranged into ascending order on the basis of the size of land holding and categories into three size groups.

<table>
<thead>
<tr>
<th>Size</th>
<th>Group I: Marginal</th>
<th>: land holding below 1 hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>Group II: Small</td>
<td>: land holding 1-2 hectare</td>
</tr>
<tr>
<td>Size</td>
<td>Group III: Large</td>
<td>: land holding 2 hectare and above</td>
</tr>
</tbody>
</table>

Then 120 Kisan Credit Card scheme beneficiaries and 120 non-beneficiaries selected randomly.

Table 4.2: Selection of beneficiaries and non-beneficiaries:

<table>
<thead>
<tr>
<th>S. No</th>
<th>Village</th>
<th>Total scheme</th>
<th>No. of KCC holder</th>
<th>Total</th>
<th>No. of selected KCC beneficiary</th>
<th>Total</th>
<th>No. of selected KCC Non-beneficiary</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Marginal</td>
<td>Small</td>
<td>Large</td>
<td>Marginal</td>
<td>Small</td>
<td>Large</td>
<td>Marginal</td>
</tr>
<tr>
<td>1.</td>
<td>Manakwar</td>
<td>48</td>
<td>41</td>
<td>29</td>
<td>118</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Budhawan</td>
<td>57</td>
<td>61</td>
<td>51</td>
<td>196</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>Ambriha</td>
<td>59</td>
<td>28</td>
<td>39</td>
<td>126</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>Simra Kalbana</td>
<td>70</td>
<td>38</td>
<td>76</td>
<td>184</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>Iradaganj</td>
<td>47</td>
<td>32</td>
<td>22</td>
<td>101</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>Dabahan</td>
<td>60</td>
<td>29</td>
<td>48</td>
<td>137</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>Dandi</td>
<td>46</td>
<td>52</td>
<td>49</td>
<td>147</td>
<td>3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>Amilia</td>
<td>70</td>
<td>94</td>
<td>29</td>
<td>193</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9.</td>
<td>Dhanaua</td>
<td>36</td>
<td>50</td>
<td>32</td>
<td>118</td>
<td>2</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.</td>
<td>Chandupur</td>
<td>50</td>
<td>59</td>
<td>62</td>
<td>171</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>543</td>
<td>484</td>
<td>437</td>
<td>1491</td>
<td>30</td>
<td>42</td>
<td>48</td>
</tr>
</tbody>
</table>
**Period of enquiry:**
The period of enquiry will related to agricultural year 2008-2009.

**Method of enquiry and collection of data:**
The survey method was adopted to conduct the enquiry. The primary data from selected Kisan credit card scheme, beneficiaries and Non-beneficiaries were collected on well prepared schedules by personal interview, for both Kisan credit card scheme periods. During the course of investigation, several visits were made, from time, to collect the information’s, keeping in view the convenience of the respondents.

Every possible care was taken to ensure the accuracy and reliability of the data. The information/data furnished by respondents were properly edited through personal checks and cross checks. The help of Block Development Officer, Assistant Development Officer and Statistical Officer, village Development Officer, Lekhapal, Panchayat Officer, Gram Pradhan and Other village leaders etc, was also sought for obtaining the correct and reliable data.

Though the study is mainly based on primary data but the required secondary data were also compiled from the office records of the following authorities and organizations.

1. District Vikas Bhawan Allahabad.
2. District Statistical office Allahabad.
3. District Agricultural office Allahabad.
4. Block headquarters (Chaka and Jasra).
5. Regional Rural Bank (RRBs) (Bank of Baroda).
7. Reports records.
8. Reports, Publications.
11. Internet.
ANALYTICAL TECHNIQUES:

Tabular analysis was used to work out the short-term credit requirement, credit availability and credit gap. To work out the credit requirement on the farm the model used.

\[ R = C + 0.5 D \]

Where, \( R \) = Credit Requirement.

\( C = \) Crop Expenditure.

\[ C = \sum (\sum C_j)i \]

\( D = C_j \) Expenditure on \( j \)th input of \( m \)th crop.

\( J = 1, 2, 3 \ldots \ldots \ldots 8. \)

Where

1 = Value of seed.

2 = Value of fertilizer and manure.

3 = Value of pesticides.

4 = Value of fuel.

5 = Irrigation charges.

6 = Labour charges.

7 = Custom liming payment.

8 = Land rent.

\( d = \) expenditure on \( k^{th} \) item of dairy.

\[ D = (Dairy \ Expenditure) \sum D_k \quad k = 1 \ldots \ldots 4. \]

\[ K = 1 \]

1 = Value of concentrates.

2 = Value of dry fodder.

3 = Green fodder.

4 = Veterinary charges.

A rating scale were used to analyze the opinion survey of the KCCs beneficiary with regarded procedure of advancing adequacy of credit etc.
Cost Concepts:

Cost $A_1$ = All actual expenses in cash and kind incurred in production by owner operator.

Cost $A_2$ = Cost $A_1$ + rent paid for leased in land.

Cost $B_1$ = Cost $A_1$ + interest on value of owned land (net of land revenue) and rent paid for leased in land.

Cost $B_2$ = Cost $B_1$ + rental value of owned land (net of land revenue) and rent paid for leased in land.

Cost $C_1$ = Cost $B_1$ + imputed value of family labour.

Cost $C_2$ = Cost $B_2$ + imputed value of family labour.

Production function and resource use efficiency:

To study the production function and resource use efficiency, Cobb-Douglas production function was applied, as it has been observed most appropriate function.

The form of production function is,

\[ Y = a x_1^{b_1} x_2^{b_2} \ldots x_n^{b_n} e \]  \( \ldots \ldots \ldots \ldots \)  (i)

Where,

$Y$ = per hectare output (Rs)

$X_1$ = Land (Ha)

$X_2$ = Human labour (Rs)

$a$ = Constant,

$b_1, b_2, b_3, & b_4$ = Elasticity coefficients of the respective input variables.

$e$ = Error term of disturbance term.
Cobb-Douglas productions function in log form:
The production function (i) was used separated for each group of farmers in each
category. The function was fitted in the data after making log transformations as:
\[
\log y = \log a + b_1 \log x_1 + b_2 \log x_2 + b_3 \log x_3 + b_4 \log x_4 + \ldots
\]
(ii)
Significance of regression coefficients (b_i) was tested by following: \( t \)-test
\[
t = \frac{b_i}{\text{S.E.}(b_i)}
\]
(iii)
t-distribution with error degree of freedom (d.f.) in the ANOVA table, it was
found to be greater than tabular ‘t’ at prescribed probability level of significance
(5 or 1 per) and at error d. f than bi was said to be significant.
To examine the validity of the model, coefficient of determination i.e. \( R^2 \) was
computed as;
\[
R^2 = \frac{\text{S.S. due to regression}}{\text{Total S.S}}
\]
(iv)
And it was tested by F-test in the ANOVA to test the goodness of fit of the
function.

Marginal Value Productivity (M.V.P.):
This formula was used for estimating the parameters of the function based on
sample data. The marginal values produced of inputs were estimated by following
formula.
\[
\text{MVP}_{x_j} = \frac{b_{yj}}{x_j}
\]
(v)
Where,
\[
b_{yj} = \text{Production elasticity with respect to } x_j
\]
\[
y = \text{Geometric mean of variable } y
\]
\[
x_j = \text{Geometric mean value of } j^{th}=1,2,3,4
\]
MVP\(_j\) = Marginal value product of jth input
Regression Analysis:

To find out the major factor affecting the repayment performance linear regression equation was used. The regression model used for the study was as follows:

\[ Y = a + b_1 x_1 + b_2 x_2 + \ldots + b_n x_n + u \]  

Where,

- \( y \) = loan amount paid
- \( a \) = Intercept
- \( x_1 \) = Land holding hectare
- \( x_2 \) = Family size
- \( b_1, b_2, b_3, \& b_4 \) are regression coefficient.

Estimation of Repayment Capacity (RC):

Repayment capacity of borrower to repay the amount borrowed. If two cultivators having same gross and net return may have different repaying capacity.

The repayment capacity was worked out as:

\[ RC = FEI - (POC + LE + IP + OD + R) \]

Where,

- \( RC \) = Repayment Capacity
- \( FEI \) = Farm family income (The income earned from farm and off farm jobs)
- \( POC \) = Paid out cost (which relates to cash expenses including seasonal loans)
- \( LE \) = Living expenses
- \( IP \) = Installment to be paid
- \( OD \) = Old debts to be paid
- \( R \) = Risk allowance at the rate of 10 per cent of Net income obtained from crops.
DECRIPATION OF TRACT

The aim of this chapter is to present maximum information about the actual surrounding of the locale in which the study was undertaken. The state of Uttar Pradesh is one of the great historical and religious centers of India. Its name means “Northern Provinces”. It is truly a miniature of India in terms of diversity of people, religions, languages as well as geographical features and agro-climatic conditions.

History of Uttar Pradesh

Many Hindus believe that Uttar Pradesh is the birthplace of the Rama and Krishna, the heroes of India’s two great epic poems, the Ramayana and the Mahabharata. The region is associated with all the religions of India, and it contains important places of worship for Hindus, Muslims, Jains, and Buddhists. Buddha preached his first sermon at Sarnath near Varanasi. From the 200’s BC, Uttar Pradesh was part of the Mauryan Empire. Later, various Hindu dynasties controlled the region. In the last A.D.1100’s invading Turks established a Muslim empire called the Delhi Sultanate. It extended its influence over Uttar Pradesh. In mid 1500’s Uttar Pradesh became the political and cultural heart of Mughal Empire. Shah Jahan builds Taj Mahal at Agra. Revolt of 1857 stared at Meerut city and spread to Lucknow, Allahabad, Agra, and Jhansi. During 1900’s Uttar Pradesh was in the vanguard of the national movement for Independence.

IMPORTANCE OF THE MAJOR CROPS IN THE UTTAR PRADESH

The vegetable crops selected for the studies are; where is the detail of both the selected crop for the studies. These vegetable crops constitute staple food in different parts of the state.

WHEAT:

Wheat covers the largest proportion of the gross cropped area in the state (8111 thousand) the production of wheat 2007 was 13384 thousand metric tons. The area concentrated in western and central eastern zone of the state western zone 45 percent central zone 35 percent and eastern zone 20 percent. In the entire area of wheat region wheat is the dominant item of rural diet all farmers produce wheat.
A relatively rapid adoption of new technology for this crop illustrates the profit maximizing motive of the farmers. Hence knowledge of land allocation input – output relationship of this crop is important.

**RICE:**

The next important crop from the point of view of area covered is rice. It covers 5288 thousand ha of the gross cropped area in the state and production of the crop was 13384 thousand metric tons in 2007. The cultivation of rice is more concentrated in the eastern zone in the diet composition as well as crop complex rice occupies a very important place in Uttar Pradesh. The farmers in the region raise rice enough for the home consumption and for sale also, for reasons of the commercial behaviors a wide range of the area might be open for responsiveness to price.

**VEGETABLE:**

Uttar Pradesh is the largest producer of vegetables. Out of about 50 different vegetable crops, potato, tomato, chilies, okra, cabbage, cauliflower, melons, onion, peas, beans and leafy vegetables are the major ones. These crops are important sources of energy in food and feed. It covers 4425 thousand ha of the gross crops area in the state and production of the crop was 14218 thousand metric ton in 2007. Vegetables are very rich sources of vitamins minerals matters protein and carbohydrates which along with some cereals and other foods constitute the essentials of a balanced diet. These crops are very profitable to the growers also.

**GENERAL ECONOMY OF TRACT:**

Uttar Pradesh has conventionally been divided indifferent agro climatic natural sectors. These sectors include the Himalayan the sub Himalayan, the west plain the control plain the east plain and the south hill plateau. The present study is related to the one of the climatic sector of Uttar Pradesh, viz. the plains is an it’s same implies, a highly fertile belt of land with plenty of water lying between the Himalayan sub sectors and open plains. The soils are enriched with high humans’ content. Prior the settlement which started during 1947-48 in this area, forest was thick and wild animals make existence of human population difficult.
After partition of the country in August 1947 settlement started and various kind of incentives were given to people for starting agriculture. Reclamation of forest was also done with the help of levy machines. The settlers in Tarai region in U.P are the landless laborers Kumaun, displayed persons from Wset Pakistan East Pakistan (Now Bangladesh retired military personal political sufferers of U.P and agricultural gradates) since the settlers were given liberal assistance by the stases and central Government substantial amount of capital has been invested in U.P the maximum of high yielding variety (H.Y.V) and rapid adoption of mechanization have further increase capital investment in U.P since 1966.

**DISTRICT PROFILE:**

**LOCATION AND ADMINISTRATION SET-UP:**

**Location and Extent:**

The district of Allahabad is located between 24° 47’ N and 25° 47’ N latitudes and between 81° 19’E and 82° 21’E longitudes. It covers an area of 5246 km2. This district lies in the southern part of the state in the Gangetic plain and adjoining Vindhyan Plateau of India. Allahabad district is surrounded by district Bhadohi and Mirzapur in the East, Kaushambi and Banda in the west, Pratapgarh and Jaunpur in the North and Banda and Madhya Pradesh are in the south. River Ganga and Yamuna flow through the district.

**Administrative Divisions:**

The district comprises of eight tehsil, namely Sadar, Soraon, Phulpur, Handia, Bara, Karchana, Koraon and Meja.Tahsil Meja is biggest one according to the area while as per population Tahsil Sadar is the biggest Tahsil of the district. It has 20 development Blocks, 2715 villages and 10 towns.
Fig 4.1: Map of Allahabad District
**Geology:**

Geologically the district presents a greater complexity than any other district of U.P. with the exception of Mirzapur. The whole Trans-Ganga tracts, the greater portion of Doab are composed of gangetic alluvium. The alluvial detritus of the Vindhyan is found in the southern part of the Doab. The Trans-Yamuna tract, the Vindhyan detritus merges in the gangetic sand and silt. The gangetic alluvium consists of alterations of fluvial deposition of sand silt and clay. The thickness of alluvium increases from south to north. The mineral products that are commonly found in the district are glass sand, building stone, kankar, brick earth and reh. Glass sands deposits are found in the neighborhood of Shankargarh (Tehsil Bara) and the requirements of most of the glass factories in northern India are drawn from these deposits. Building stone (kaimur sandstone) is extracted either by blasting or by splitting the chief quarries. Bricks and pottery, earth-material is available in the alluvial tract of the district and is locally used for the manufacture of bricks and earthenware. ‘Reh’ is found as white encrustations in the ‘usar’ land especially in trans-ganga tract. Soda ash, which is extracted from it, is used in making of soap and glass, in the dyeing industry and for the treatment of hard water.

**Topography:**

The district may be divided in the three distinct Physical parts. The trans-Ganga or the Gangapar Plain, the doab and trans-Yamuna or the Yamunapar tract which are formed by the Ganga and its tributary, the Yamuna, the latter joining the former at Allahabad, the confluence being known as sangam. Trans Ganga tract comprises poor sandy soil (full of kankar) with stretches of sodic lands popularly known as 'USAR'. In tehsil Handia, the water table is high and the water in excess, collecting in numerous lakes which form the most noticeable feature of the area, especially in northern part. The Trans Yamuna tract forms a part of Bundelkhand region.
River System:

The rivers of the district belong to the main system of Ganga and comprise several subsystems of which the most important are the Yamuna and the Tons, other including the minor systems of the Varuna and the Sai.

Climate:

The climate of Allahabad district is characterized by a long and hot summer, a fairly pleasant monsoon and cold seasons. The winter usually extends from mid-November to February and is followed by the summer which continues till about the middle of June. The south-west monsoon then ushers in the rainy season which lasts till the end of September. October and the first half of November constitute the post-monsoon season.

Rainfall:

The district has 8 rain-gauge stations – Allahabad, Handia, Karchhana, Meja, Phulpur and Soraon with records ranging from 62 to 98 years. The rainfall of Allahabad district generally decreases from the south-east to the north-west. About 88 percent of the annual rainfall is received during the monsoon season. July and August being the months of maximum rainfall. The normal rainfall in the district is 975.4 mm. (38.40”) but the variation from year to year is appreciable on an average there are about 48 rainy days in a year, the variation in different parts of the district being negligible.

Table 4.1: Month Wise Rainfall 2006-2009:

<table>
<thead>
<tr>
<th>Month</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>0.0</td>
<td>0.0</td>
<td>3.0</td>
<td>0.5</td>
</tr>
<tr>
<td>February</td>
<td>0.2</td>
<td>93.6</td>
<td>8.6</td>
<td>0.0</td>
</tr>
<tr>
<td>March</td>
<td>19.7</td>
<td>13.4</td>
<td>0.0</td>
<td>2.4</td>
</tr>
<tr>
<td>April</td>
<td>29.8</td>
<td>14.4</td>
<td>0.0</td>
<td>2.8</td>
</tr>
<tr>
<td>May</td>
<td>42.0</td>
<td>0.2</td>
<td>1.2</td>
<td>55.4</td>
</tr>
<tr>
<td>June</td>
<td>104.6</td>
<td>46.4</td>
<td>1.2</td>
<td>3.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>July</td>
<td>379.0</td>
<td>350.8</td>
<td>45.4</td>
<td>159.4</td>
</tr>
<tr>
<td>August</td>
<td>163.0</td>
<td>275.6</td>
<td>441.0</td>
<td>98.8</td>
</tr>
<tr>
<td>September</td>
<td>58.6</td>
<td>158.2</td>
<td>42.4</td>
<td>126.8</td>
</tr>
<tr>
<td>October</td>
<td>10.6</td>
<td>36.0</td>
<td>72.4</td>
<td>86.9</td>
</tr>
<tr>
<td>November</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>143.0</td>
</tr>
<tr>
<td>December</td>
<td>0.0</td>
<td>2.6</td>
<td>0.0</td>
<td>122.9</td>
</tr>
<tr>
<td>Total</td>
<td>807.6 mm</td>
<td>991.2 mm</td>
<td>616.2 mm</td>
<td>804.0 mm</td>
</tr>
</tbody>
</table>

**Temperature:**

There is one meteorological observatory in the district, the records of which may be taken as representative of the meteorological conditions in the district.

From about the middle of November, the temperatures begin to fall rapidly and in January (the coldest month) the mean daily maximum is 23.7°C (74.7°F). In association with the wake of western disturbance passing eastwards, the minimum temperature may go down to a degree on two above the freezing point of water and slight frosts may occur. Temperatures rise rapidly after February. The heat in the summer season—particularly in May and the early part of June is intense. May usually being the hottest month of the year with the mean daily maximum temperature at 41.8°C (107.2°F) and the mean daily minimum at 26.8°C (80.2°F). The hot dry and often dusty westerly winds (locally known as loo) make the heat more intense during the daytime especially in the trans-Yamuna tract due to the radiation from the stony outcrops.

**Humidity and Cloudiness:**

The climate is marked by high relative humidity i.e. 70 to 80 percent during monsoon and progressive decrease in humidity (during the summers humidity is very low i.e. 15 to 20 percent only). During the monsoon season the skies are heavily clouded but during the rest of the year they are clear or lightly clouded except for short spells of a day or two during the cold season when in association with the passing western disturbances, they become cloudy.
Winds:
Winds are generally light throughout the year with some increase in force in the summer (particularly in the afternoons) and during the south west monsoon season. From November to April they blow predominantly from the west or north-west. By May easterlies and north-easterlies also appear. In the monsoon season, the direction of the winds is either south west to west or north-east to east. By October the north easterlies and easterlies become less frequent. The mean wind speed for the district in Kilometers per hour is 4.2 in January, 5.0 in February, 6.0 in March, 6.6 in April, 7.6 in May, 8.7 in June, 7.7 in July, 6.9 in August, 6.0 in September, 3.7 in October, 2.7 in November, and 3.2 in December, the mean annual speed being 5.7.

Flora:
The reserved forest area under the state forest department in the district is 19839 Hectares of which nearly 98 percent lie in Trans Yamuna own mainly in two subdivisions Meja 14832 and Bara 4806. Phulpur and Karchhana have no forest cover. Till the beginning of the present century patches of 'dhak' were found in the trans-Ganga tract mostly between Phulpur and Sarai Mamrez, along the bank of the sasur khaderi, but most of them were cleared for agricultural purposes during the following decades. The right bank of the Ganga has patches of babul. Forest now exists only in the trans-Yamuna tracts in Bara tahsil and the southern tracts of tahsil Meja. The chief varieties of trees found in these forest are Dhak (Butea monosprma), Kakor, (Ziziphus globerrima), Aonla (Emblica ofbicinalis), Kahwa (Terminalia arjuna), Jharberi (Ziziphus numilaria), Kanju (Holoplelea inegrifolia), Mahua (Madhuca indica), Semal (Salmalia Malabarica), Salai (Boswellia Serrata), Khair (Acacia Catechu), Harra (Terminalia chebula), Chiraunji (Buchanania lanson), Bahera (Terminalia beherica) and Babul.

Fauna:
Forest cover plays an important role in the economy of the district. The supply of fuel, fodder and bamboo’s etc. is made from these forests The wild life of the district has depleted considerably owing to the destruction of forest and reckless shooting in the past. In 1880 wolves became such a past that rewards were given for their
destruction. They are found in the trans-Yamuna tract and especially along the banks of the Ganga. The number and species of wild animals are much greater in the trans-Yamuna tract than elsewhere in the district. The tiger (Panthera Tigris) visits the district from Mirzapur or Madhya Pradesh. The bear (Melursus ursinus) is found in the southern part of the trans-Yamuna tract and the leopard (Panthera Pardus) is sometimes seen in the ravined area of the Yamuna in tahsil Bara and the southern part of the tahsil Meja. The bear and the Chinkara (Gazella bennetti) also known as the Indian gazelle or ravine deer are found in tahsil Bara and the Sambar (Cervus unicolor) occurs in small numbers in the southern part of tahsil Meja. The hyaena considerable herds of the Indian blank buck (Anteloppe cervicapra) and the boar (sus secrofa), which do much damage to the crops, are also found in the last also being met with in the flood plain of the Ganga and the doab. The milgai or blue bull (Boselaphus tragocamelus) is found in the tahsil of trans-Yamuna tract. The fox (Kulpus bengalensis), the hare (Lepus ruficaudatus), and the sahi or Indian porcupine (Hystrix leucura) are found throughout the district.

Minerals:

Minerals wealth of the district has great significance in terms of socio-economic prosperity and economic base. It contributes largely for developing an area by providing economic opportunities and enriching an area with its natural endowments. The mineral products that are commonly found in the district are glass sand, building stone, Kankar, brick earth and reh.

Glass Sand:

Some of the best glass sand deposits are found in the neighborhood of Shankargarh and Lohgara (both in tahsil Bara) and the requirements of most of the glass factories in northern India are drawn from these deposits.

Building Stone:

The Kaimur sandstone is an excellent building stone. It lies in beds varying between 150 m.m and 2.5 m.m thickness. These stones one found in the southern parts of the district.
SOIL:

The area across the Ganga is quite fertile having loam and sandy loam soils. Doaba area has mostly alluvial soil. In Allahabad district the soil range is wide or the soil different types are found such as loam, alluvial and sandy loam soil. But loam and alluvial soil covers more area. Which are suitable for their crops like paddy, wheat, pulses and vegetables etc in some places user land also exists?

IRRIGATION:

If we analyse the sources of irrigation in Allahabad district, we can witness three distinct phases during the period of year 1960-61 to year 2000-01. The first phase covers the period 1960-61 to 1969-70. This is the phase when traditional sources of irrigation continued to be significant. Canals and tubewell together covered less than 50 per cent of net irrigated area. The fact that other wells accounted for irrigation of more than 50 per cent of net irrigated area during this phase showed continuing importance of traditional sources of irrigation during this phase. The next phase covers a long period of 1970-71 to around 1995-96. In this phase, area irrigated through traditional sources declined very fast, especially after 1975-76. The area irrigated through canals increased from around 25 per cent to around 45 per cent, and the area irrigated through tubewell increased from around 25 per cent to around 50 per cent. In this phase contribution of canals and tubewell was almost same. The third phase could be said to have started since 1997-98. In this phase, the contribution of canals increased.

Land Use Related to Agriculture

Net Sown Area

When we discuss about land use, agriculture finds the dominant place in various categories of land use. This is true of Allahabad district as well. The proportion of net sown area in the district varied around 63 per cent to 65 per cent during 1960-61 to 1994-95. But the net sown area as percentage of total reporting area increased to above 67 per cent in 2006. This is so, because the blocks which have remained with Allahabad district had higher proportion of net sown area. But the net sown area as per cent of total reporting area varied among different blocks of the district. Blocks where proportion of net sown area was high (i.e. above 70 per
cent) during 2000-2K are Holagarh, Mau-Aima, Baharia, Phulpur, Pratappur, Saidabad, Dhanupur, Karchhana, Kaundhiara and Koraon. Except Koraon, in the blocks, net sown area has remained stagnant within the range of 2 per cent to 3 per cent around their present level. Blocks with medium share of net sown area (i.e. between 60 per cent to 70 per cent) are Soraon, Bahadurpur, Jasra, Uroowa and Meja. Except Meja, all these blocks had attained high level of share of net sown area (i.e. Above 70.0 per cent) in the past. That is in future, they could easily exhibit high level of net sown area. There are also some blocks where net sown area as percentage of total reporting area was low (i.e. less than 60.0 per cent). These for size included Kaurihar, Shankargarh, Chaka and Manda.

**CROPPING PATTERN:**

The cropping pattern in the district has vastly changed during the last 30 years. The only crop which continues to be important during all these years is paddy. Area under paddy cultivation increased from around 30.7 per cent of net sown area in 2005-06 to around 57.06 per cent during 2009-10. Area under wheat cultivation increased from 11.60 per cent in 2005-06 to 57.31 per cent of net sown area in 2009-10. But area under different coarse grains declined during this period, for example area under barley declined from 18.7 per cent to 2.87 per cent, gram cultivation declined from 20.7 per cent to 10.07 per cent, and peas cultivation declined from 6.84 per cent to 1.76 per cent during 2005-06 to 2009-10. Besides wheat and paddy, other crop whose area under cultivation increased is potato. The area under potato increased from around 0.90 per cent in 2005-06 to 3.36 per cent in 2009-10. The main crops viz. paddy, wheat, and potato and sugarcane have witnessed very large increases in their productivity also during the period 2005-06 to 2009-10. If we analyses other factor namely productivity, we find that area under cultivation has increased in case of only those crops, whose productivity has also increased significantly. The productivity of paddy increased from 6.85 qt./ha in 2005-06 to 18.30 qt./ha in 2009-10. The productivity of wheat increased from 8.72 qt./ha in 2005-06 to 22.70 qt./ha in 2009-10. As regards cash crops, the productivity of potato increased from 51.88 qt./ha in 2005-06 to 204.72 qt./ha in 2009-10. And these are the very crops, which are almost cent percent irrigated. Thus, farmers have shifted to crops, which are highly irrigated, fertilizer
use is higher on them and whose productivity is also comparatively very high. We need to make efforts to increase production of more pluses, oilseeds and spices. Following steps are imperative to achieve it.

(a) More thrust to be given for developing high yielding varieties of pulses, oil seeds and spices.

(b) Rain fed areas should be encouraged to cultivate these crops.

(c) Orchards, fallow land and land under social forestry could be used for growing such crops.

(d) Processing industries of oilseeds and spices be promoted at local level with support for technology up gradation, packaging and market access facilities.

**Fertilizer Use**

Use of fertilizer had been increasing in all the blocks. But their balanced and proportionate application has not been reported. There is need to adopt following strategy to combat this menace:

(a) Lay guidelines for each gram-panchayat-on the basis of soil-testing – the proportion of fertilizer which is required to be applied.

(b) Farmers meeting be organized at village level before every cropping season to make them aware about such guidelines.

(c) Farmers be also informed about hazardous impact of non-proportionate application of urea.

(d) Government functionaries, especially at the gram-panchayat level be sensitized regarding these aspect

**DISTRIBUTION OF LAND HOLDING:**

The average size of landholding was 0.88 hectare during 2008-09 and declined to 0.75 hectares as per the 2009-10 agricultural censuses. It could also been seen from the table that during 2010-11, 91.43 per cent holdings belonged to the small and marginal farmers, while they accounted for only 57.25 per cent of total area under all landholdings, while during 2011-12, 89.51 per cent holdings belonged to small
and marginal farmers, and these categories accounted for 50.77 per cent of area under total holdings.

**SOCIO-ECONOMIC STATUS:**

According to 2001 census the population of Allahabad districts is 4921310 out of which the rural population is 3898950. The population of scheduled caste is 1203850 which are 24.5 percent of the total population urban population is 10.77 Lakh.

**OCCUPATION:**

The pressure on land in Allahabad continues to increase because a sizable work-force was found to be engaged in agricultural activities. As per the 2001 census 68.26 per cent workers were cultivators and 25.94 per cent workers were engaged as agricultural labourers. The high proportion of agricultural workers shows that employment in secondary and tertiary sector was growing very slowly. This is evident from the fact that number of workers engaged in household industry was 3.52 per cent while those engaged in other than household industry was 1.61 per cent only. The number of workers engaged in trade and commerce and other services was 6.67 per cent and 11.94 per cent respectively.

**DEMOGRAPHIC FEATURES:**

The total population of the district as per 2001 census was 3797033. The rural population being 3023445 accounted for 9.61 percent of the total population as compared to 81.54 percent in 2001 census. This indicates as shift of the rural population to cities and town areas. The number of villages is 3886 out of which 3531 area inhabited villages.

An important demographic feature of the district is that the scheduled castes are in sizeable number constituting as much as 19.11 percent of the total population. The total work force is about 948714 farming 25 percent of the total population. Among the working population especially in rural areas, agriculturist and agricultural laborers constituted major proportion. As much as 74 percent of the total work force is dependent upon land and land based activities. Industrial workers trade commences and services are concentrating in Allahabad city and to
some extent in other towns of the district pucca roads. Another 1276 villages are connected by Kachcha road motor able throughout the year and 608 villages by roads negotiable only in fair weather. Thus only 53 percent of total villages are connected by road approachable throughout the year.

The total length of the railway track in the district is 303 kms. The main railway lines connecting Calcutta-Delhi and Calcutta-Bombay pass throughout the district presently.

**JASARA BLOCK:**

There are 20 development block in the district Allahabad. Block Jasra was reestablished on 20th of August 1972. The total geographical area of the block is 26,958 hectares, with a total population 112,399 and cultivable area 18,899 hectares.

Various extension Programme of the block:

1. Samoh Gathan i.e. selected group loan
2. Jawahar Rozgar Yojna (JRY)
3. Personal Loans
4. Construction of houses for weaker sections
Fig 4.2 Map of Block in Allahabad District
DESCRIPTION OF THE BLOCK:

Block Jasra is situated on the South-Western part of Allahabad making the block boundaries with Shankargarh block and also makes the district boundary with Banda district. It was re-established on 20th August 1972. The block headquarter is situated about 20 K.M. away from Allahabad city. Rewa road connects the block with the city.

There are 116 revenue villages with 60 Gram Panchayats and 9 Nyay Panchayats in the block.

Land Use Pattern and Land Use Plans in Jasra Block:

It could be increased to around 2 per cent if some part of culturable waste land could be used for social or energy forestry. We propose that around 2.0 per cent of TRA (Total Reporting Area) under culturable waste land could be identified for development of forest in the block. Concept of private micro forest and joint forest will have to be developed to increase area under forest. The proportion of area under barren and uncultivable land in Jasra block had been 1.88 per cent of TRA since 1996-97. Barren and uncultivable land could be reduced and a part of it could be utilized to meet increasing need of land for non-agricultural purposes. We propose that around 1 per cent of total reporting area which is in the category of uncultivable land will have to be utilized for non-agricultural purposes. We have already discussed that a part of culturable waste could be converted into forest. We furthermore propose that another part of culturable waste could then be converted into pasture land. We fail to understand as to why there should be any culturable waste land. The area which cannot be converted into forest should be converted into pasture and grazing land in the long run. However, for a plan targeting year 2010, we propose that 1.0 per cent of TRA under such land be utilized for pasture and grazing land. The area of land under miscellaneous trees and groves had been below 0.5 per cent of TRA since 1985-86. We propose to convert 2.0 per cent of TRA under other fallow land for purposes to develop orchards as we feel it would be difficult to bring it back for agricultural purposes.
Total Reporting Area (TRA) and Land Use Pattern in Jasra Block (in percent)

Table 4.2: Land Utilization in the Jasra block:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Particulars</th>
<th>Area(ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total Geographical area</td>
<td>41986</td>
</tr>
<tr>
<td>2</td>
<td>Net area sown (ha)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Irrigated (ha)</td>
<td>17939</td>
</tr>
<tr>
<td></td>
<td>ii) Un-irrigated (ha)</td>
<td>20206</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2579</td>
</tr>
<tr>
<td>3</td>
<td>Area under crops</td>
<td>22785</td>
</tr>
<tr>
<td></td>
<td>Rabi</td>
<td>12505</td>
</tr>
<tr>
<td></td>
<td>Kharif</td>
<td>10147.80</td>
</tr>
<tr>
<td></td>
<td>Zaid</td>
<td>132.20</td>
</tr>
<tr>
<td>4</td>
<td>Forest</td>
<td>1262</td>
</tr>
</tbody>
</table>

Source: Block Development Office Jasra.

Table 4.3: POPULATION OF JASRA BLOCK:

<table>
<thead>
<tr>
<th>S.NO</th>
<th>Particulars</th>
<th>Number</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Total Population</td>
<td>143231</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>76526</td>
<td>76.52</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>66705</td>
<td>66.70</td>
</tr>
<tr>
<td>2.</td>
<td>Total Families</td>
<td>31090</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scheduled Caste</td>
<td>30616</td>
<td>30.61</td>
</tr>
<tr>
<td></td>
<td>Backward class</td>
<td>474</td>
<td>47.04</td>
</tr>
</tbody>
</table>

Source: Block Development Office Jasra.
Climate:

District Allahabad comes under topical area and so comes the block. The summer is characterized by extreme day heat with a maximum temperature of 45°C in winter season there is frequent cold which brings down the temperature.

There are distinct seasons namely:-

1. The rainy season extending from last week of June to October.
2. The winter season extending from November to February.
3. Summer season extending from March to June.

<table>
<thead>
<tr>
<th>Table 4.4 : Position of the Jasra block</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting date of the block</td>
</tr>
<tr>
<td>Revenue villages</td>
</tr>
<tr>
<td>Village Panchayats</td>
</tr>
<tr>
<td>Nyay Panchayats</td>
</tr>
<tr>
<td>GPVA(VLW) Circle</td>
</tr>
<tr>
<td>Fertilizer store (Govt &amp; Private)</td>
</tr>
<tr>
<td>Seed Store (Govt &amp; Private)</td>
</tr>
<tr>
<td>Agri chemicals Store (Govt&amp; Private)</td>
</tr>
<tr>
<td>Rural Godowns (Grain &amp; Fertilizer)</td>
</tr>
<tr>
<td>Literacy rate (%)</td>
</tr>
<tr>
<td>Male</td>
</tr>
</tbody>
</table>
Female 39.26
Primary Schools -
Middle Schools 18
High and Intermediate college 74
A/H and Veterinary college -
Technical institute 1
Aganwadi center 162
Veterinary hospital 3
Agricultural service Centre 1
Other (if any) 3

Source: Block Development Office Jasra.

IRRIGATION:-

Table 4.5 Showing the sources of irrigation in the Jasra block

<table>
<thead>
<tr>
<th>S.No</th>
<th>Source of Irrigation</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Govt tubewell</td>
<td>930</td>
</tr>
<tr>
<td>2</td>
<td>Private tubewell</td>
<td>1625</td>
</tr>
<tr>
<td>3</td>
<td>Canal</td>
<td>11595</td>
</tr>
<tr>
<td>4</td>
<td>Private tube wells</td>
<td>113</td>
</tr>
<tr>
<td>5</td>
<td>Tank</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Ponds</td>
<td>48</td>
</tr>
</tbody>
</table>

Source: Block Development Office Jasra.
Table 4.6: Agricultural implements in the Jasra block:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor</td>
<td>1810</td>
</tr>
<tr>
<td>Plough</td>
<td>209</td>
</tr>
<tr>
<td>Improved Harrow</td>
<td>1705</td>
</tr>
<tr>
<td>Thresher</td>
<td>1535</td>
</tr>
<tr>
<td>Sprayer</td>
<td>25</td>
</tr>
</tbody>
</table>

Source: Block Development Office Jasra.

CHAKA BLOCK:

There are 20 development block in the district Allahabad. Block Chaka was reestablished on 1th of April 1958. The total geographical area of the block is 15,787 hectares, with a total population 1lach 77 and cultivable area 14,899 hectares. Various extension Programme of the block:

1. Samoh Gathan i.e selected group loan
2. Jawahar Rozgar Yojna(JRY)
3. Personal Loans
4. Milk production program

LOCATION OF THE BLOCK:

Block Chaka is situated on the part East of Allahabad making the block boundaries with Jasra block and also makes the district boundary with Rewa district. It was re-established on 1th April 1958. The block headquarter is situated about 3 K.M. away from Allahabad city. Rewa road connects the block with the city.

There are 101 revenue villages with 49 Gram Panchayats and 8 Nyay Panchayats in the block.
### Table 4.7: Land Utilization in the Chaka block:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Particulars</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total Geographical area</td>
<td>573.74 Sq.km</td>
</tr>
<tr>
<td>2</td>
<td>Net area sown</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Irrigated</td>
<td>7666.5 ha</td>
</tr>
<tr>
<td></td>
<td>ii) Un-irrigated</td>
<td>4599.9 ha</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3066.6 ha</td>
</tr>
<tr>
<td>3</td>
<td>Area under two crops</td>
<td>3926</td>
</tr>
<tr>
<td>4</td>
<td>Forest</td>
<td>388</td>
</tr>
<tr>
<td>5</td>
<td>Cultivable waste land</td>
<td>3624</td>
</tr>
<tr>
<td>6</td>
<td>Permanent grazing land &amp; other</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Area under orchards with is not included in sown area</td>
<td>3435</td>
</tr>
</tbody>
</table>

Source: Block Development Office Chaka.

### Table 4.8: Population of Chaka Block:

<table>
<thead>
<tr>
<th>S.No</th>
<th>Particulars</th>
<th>Number</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Total Population</td>
<td>173084</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>92860</td>
<td>92.86</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>80224</td>
<td>82.24</td>
</tr>
<tr>
<td>2.</td>
<td>Total Population</td>
<td>218470</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scheduled Caste</td>
<td>45386</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>23966</td>
<td>23.66</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>21380</td>
<td>21.80</td>
</tr>
</tbody>
</table>

Source: Block Development Office Chaka.
Climate:

District Allahabad comes under topical area and so comes the block. The summer is characterized by extreme day heat with a maximum temperature of 45°C in winter season there is frequent cold which brings down the temperature.

There are distinct seasons namely:-

4. The rainy season extending from last week of June to October.

5. The winter season extending from November to February.

6. Summer season extending from March to June.

Table 4.9: Position of the Chaka block

<table>
<thead>
<tr>
<th>Starting date of the block</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; April 1958</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue villages</td>
<td>101</td>
</tr>
<tr>
<td>Village Panchayats</td>
<td>49</td>
</tr>
<tr>
<td>Nyay Panchayats</td>
<td>8</td>
</tr>
<tr>
<td>GPVA(VLW) Circle</td>
<td>45</td>
</tr>
<tr>
<td>Seed Store</td>
<td>1</td>
</tr>
<tr>
<td>Co-operatives Stores</td>
<td>9</td>
</tr>
<tr>
<td>Total Education</td>
<td>60.78%</td>
</tr>
<tr>
<td>Female education</td>
<td>45.17%</td>
</tr>
<tr>
<td>Male education</td>
<td>74.11%</td>
</tr>
<tr>
<td>Primary Schools</td>
<td>92</td>
</tr>
<tr>
<td>Middle Schools</td>
<td>32</td>
</tr>
<tr>
<td>High and Intermediate college</td>
<td>47</td>
</tr>
<tr>
<td>Source of Irrigation</td>
<td>No.</td>
</tr>
<tr>
<td>----------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Pump Sets</td>
<td>70</td>
</tr>
<tr>
<td>Exhaust Pump</td>
<td>96</td>
</tr>
<tr>
<td>Canal</td>
<td>435Km</td>
</tr>
<tr>
<td>Private tube wells</td>
<td>1707</td>
</tr>
<tr>
<td>Personal Pumping sets</td>
<td>177</td>
</tr>
<tr>
<td>Wells</td>
<td>96</td>
</tr>
</tbody>
</table>

Source: Block Development Office Chaka.