CHAPTER 1

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Introduction

Banking institutions play a vital role in supplementing and complementing the development of economy in general and agriculture in particular. Now-a-days, it is well-established fact that, farm credit plays a strategic role in unleashing the productive forces and changing agrarian relations. Further, it is expected to modernize agriculture, where, it is not only stimulating and increasing the production but also leading to change in the income and employment structure of farmers.

Initial efforts to build up formal institutional system of finance for agriculture in rural areas commenced with the adoption of Co-operative Credit Societies in 1904. All India Rural Credit Survey Committee (1954) observed that, the co-operative credit system failed to meet effectively the credit requirements of the agriculture sector. The money lender charged usurious rates of interest unrelated to production and productivity and levels of incomes of farms implying that institutional credit to the rural sector needed to be strengthened and related to production / productivity¹.

As technological development in agriculture sector started gathering momentum, it was expected that the commercial bank would play an increasingly

role in agricultural credit. Following the increasing needs of farm sector, under the policy of ‘social control’ over the banks in 1967, the process of nationalization took in two spurts in 1969 and 1980 with the object of fulfilling increasing agriculture credit requirements.

Later, in 1975 a new institution that is Regional Rural Bank was established with the object of providing financial assistance to exclusive target groups of weaker sections. Thus, a multi-agency consisting of co-operatives, commercial banks and regional rural banks has been adopted to provide timely, adequate and relatively cheap credit to farmers. The main objective of credit policy is to provide credit facility especially to small and marginal farmers to enable them to adopt modern technology and improve agricultural practices. This, in turn, enables to increase the production and productivity. The cooperative credit structure, despite its deficiencies it is still regarded as an effective vehicle for ushering in the desired socio-economic changes having regarded to the conditions prevalent in rural India.

Growth of sugarcane

Agriculture is said to be a backbone of Indian economy. It occupies a central place among the economy’s different segments on account of its significant role in all round economic development of the country. It supplies
adequate quantity of food grains for the nation, raw materials to the industries and providing employment opportunity for about 70 per cent of the rural population. So, agriculture occupied pride place in our economic development.

The sugarcane (saccharum officinarum) is an important cash crop in India, which helps to increase country’s income and employment. The area under sugarcane in India increased from 33.29 lakhs hectares in the year 1988-89 to 42.24 lakhs hectares in 1999-2000. Similarly, production rose from 2030.37 lakhs tonnes in 1988-89 to 2990.36 lakhs tonnes in 1999-2000. The sugarcane yield increased from 61 tonnes to 71 tonnes per hectare during two time periods. (1988-89 and 1999-2000)

Karnataka State has the fourth place in sugarcane production after Uttar Pradesh, Maharastra and Tamil Nadu respectively. In Karnataka the area under cultivation was 2.40 lakh hectares in 1988-89 and increased to 3.61 lakh acres in 1999-2000. Whereas, the production went up by 187.33 lakh tonnes in 1988-89 to 365.05 lakh tonnes in 1999-2000 and cane yield per hectare in 1988-89 was only 78 tonnes and accelerated to 101 tonnes during 1999-2000. It is essential to note that, extensive cultivation of sugarcane helps to increase Gross Domestic Product and Gross National Product. For enhanced sugarcane production, the technological improvements in cultivation are absolutely
necessary. Adoption of technological innovations is essential to meet the nations anticipated requirements.

**Importance of Bank finance to sugarcane growers**

The adoption of new technology—purchase of seed sets, fertilizers and payment of human and bullock labour, farm mechanization, massive investment for irrigation, building infrastructure etc., requires heavy amount of capital investment. These expenses cannot be met by the formers from their own savings so they should be supported by a dependable and robust bank credit system. Thus, bank finance plays a crucial role in meeting increasing technological requirement in agriculture.

The above statements are supported with the following data. The flow of institutional credit for agriculture and allied activities has increased from Rs.26411 crores in 1996-97 to Rs.44612 crores in 1999-2000. Of the total credit disbursement for 1999-2000, the share of commercial bank was Rs.22854 crores, and that of co-operatives and regional rural banks were Rs.18429 crores and Rs.3329 crores respectively.

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Further, it is stressed that, credit assumes greater importance in the transformation of agriculture in general and sugarcane in particular from traditional subsistence type to modern and scientific farming. So, it is essential at this moment, to establish an effective co-operation between operational functions of banking institutions for providing timely and adequate finance for modern agriculture.

**Statement of the problem**

Belgaum district is a sugar bowl of Karnataka. The district stood first in area and production of sugarcane in the state. The sugarcane cultivation is labour and capital intensive one. With breakthrough in farm technology the financial requirements for sugarcane cultivation has considerably enhanced and correspondingly the large amount of credit requirement for sugarcane cultivation has increased enormously in the recent past. It is in this context, farm finance has become sin-quo-non in these days for the successful adoption of technology. In view of this fact, the bank finance plays a key role in boosting up and stabilizing growth in agriculture sector.

The banking scenario in post-nationalization period, of course, changed from ‘class-banking’ to ‘mass banking’ and ‘social-banking’. Thereby, a phenomenal increase is noticed in number of bank offices, deposits and advances. However, in reality, the uneven regional disbursement of credit,
inadequate financing and unsatisfactory impact of finance were of serious concern, in the credit system, till today is a glaring problem.

The problem of farm credit is not merely an inadequate flow of credit but also unscientific estimation of credit, improper credit utilization, ineffective recovery, and other operational deficiencies are important among all the credit-lending problems. These problems specially, forced small and medium farmers to switch over their idea of borrowing loans from institutional to non-institutional agencies.

To make the study more microscopic and analytical the present study is undertaken to evaluate the pattern of credit, estimation of credit requirement, utilization of credit, problems faced by farmers in obtaining loans and other problems encountered by bankers of sample banking institutions in Belgaum district, assumes a special significance. Hence, the statement of problem:

"BANK FINANCE TO SUGARCANE GROWERS IN BELGAUM DISTRICT: A CRITICAL STUDY"

Review of Literature

Many expert committees and social scientists on several aspects relating to the subjects made a plethora of studies on bank finance in the country. In this section, a review of literature on various aspects of agricultural finance, which are relevant to this study, is presented under eight broad headings:
1. Credit requirement
2. Flow of credit
3. Credit utilization
4. Recovery and overdue analysis
5. Performance of banking institutions
6. Lending and borrowing problems
7. Risk management system in banks and
8. Impact of bank loan on farmers.

The detail review of literature under the above headings are presented here under:

I). Credit requirement

Sanjeev Kapoor\(^4\), highlighted the demand and supply analysis of institutional credit in Indian agriculture from scheduled commercial banks in different states of India. The Priori model consists of two structural equations, one equation representing the demand for and another for supply of agricultural credit. The structural coefficients are estimated using two stages least square and regression technique, the aggregate level of demand and supply functions

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for different type of agriculture credit are also estimated using state-wise pooled time series data. The results of estimated coefficient in estimated structural demand and supply appear to be significant and further, higher the temporary fall in current incomes of the farmers, higher will be the demand for banks agricultural credit. The author however suggested that, there is a need to review the appropriateness of concessional interest, reducing the cumbersome procedure & delay in sanctioning of loans, and higher flow of credit at the time of drought & flood.

Shukla and Pandey (1969)\(^5\) highlighted the cost and returns of sugarcane farm in Varnasi (UP) on selected groups. The result revealed that, the human labour was main cost, which accounted for 37.32 per cent of the total cost per hectare. The next important cost among total cost was fertilizers and farm yard manure, which stood at 14.60 percent of the total cost. They estimated per hectare the value of sugarcane output at Rs.3119 and net income worked out per hectare was Rs.998. They indicated that there is a significant relation between gross returns and net income. They suggested that the credit requirement should be calculated based on cost & return.

Pandey H. K. (1972)\(^6\), in his study on estimation of credit needs under different technological conditions in Dearia and Varanasi district of Uttarpradesh. The linear programming model was used to assess the needs. The credit needs at the existing technology of the farmers was average about Rs.258 per hectare but increased to Rs.312.15, per acre under improved technology. It is learnt that, situation of adoption of improved technology without any credit did not increase the income of the farmers significantly. It is found from the results that, adoption of improved technology with adequate credit facilities increased the incomes of the farmers in both the regions. Thus, banks should make effort to extend the needed credit to adopt improved technology.

Ragothaman G. et al. (1983)\(^7\), analyzed the unit-output-price profit function approach to estimate credit requirement. The study is focused on only credit dimensions of technological dualism. The Cobb-Douglas functional form was employed to estimate input-output relations of crop. The objective of the study is to estimate the additional amount of credit requirements to lead the farmer’s farm the sub-optimal level of operation to optimal level of operation. The estimation of additional credit requirements for paddy enterprise in case of

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average old technology group-I showed Rs.446 per acre to use optimum quantities of inputs to get optimum quantity of output. Similarly, Rs.640 per acre in case of group III. But in case of new technology, additional credit requirement estimates Rs.609 in case of group-I Rs.880 by group II & Rs.1178 by group III. The total credit requirement estimated to be Rs. 3.62 lakhs.

Patel G. N. et. al. (1988), have estimated the credit requirement and credit gap on small and marginal bidi tobacco farms in central Gujarat. They stressed in their study that, the cost of crop and the expected returns from the crop are important aspects in estimating the credit requirements. The criteria adopted to estimate the credit requirement are of three types that is 100 percent of variable cost, 75 percent of variable costs keeping 25 percent margin excluding family human labour cost from the total variable cost. It is suggested, that 100 percent of variable cost & excluding family labour cost from variable cost are suitable methods of estimating credit requirements. Further, they stressed that, financial institutions in the study area should try to equip with current trends of inputs to meet out credit demands of the farmers.

Vishwa Prasad and P. B. Parthasarathy (1993), have analyzed credit supply and estimation of credit gap in Medak district of Andhra Pradesh. To estimate productivity, a simple linear regression model was used and a simple formula is used to ascertain credit gap, that is, \[ \text{Credit gap} + \text{Total expenses in the farm} + \text{Family expenses} + \text{Prior debts} - (\text{Own sources of finance} + \text{Borrowed funds}) \]. The credit productivity is estimated to know the borrowed capital is productive or not the results of \( R^2 (0.7333 \text{ significant at 1 per cent level}) \) denoting that the selected variable (family expenditure, own sources of farmer, prior debts, borrowed funds) influences on gross return as well as significant relation with farm size. The estimated per farm credit gaps, in case of small farmer is high as comparing to medium and small farmers. The study suggested that, the need is to be taken to safeguard the interest of small farmers by providing sufficient loan to meet expenses on cultivation and consumption.

Dodake M.D. and Kuchnadiya D.B. (1998) investigation was undertaken to estimate short-term credit requirement and credit gap of farmers in Junagadh district of Gujarat state. It is clear from the study that, average farm credit supplied by co-operative in more than that of RRBs and CBs.

The operating cost is more in case of small farmers that is Rs.7188 per hectare. The average operating cost is Rs.7023 but average credit availability per hectare was Rs.4647. Thus, it is revealed from the study that, there is a credit gap of Rs.2376, which is about 34 percent of the credit requirement. There is significant relationship between the size of the farm and the credit availability. They suggested that, the financial institutions have to increase the scale of finance in accordance with credit requirement to avoid credit gap.

II. Flow of credit

Chowdhari T.P.S and Sharma J.N. (1970)\textsuperscript{11} conducted a study on crop loan system in Andhra Pradesh and Punjab with the objectives of knowing the adequacy of crop loans that is supply vs. demand, timelines, utilization and recoveries. The Cobb-Douglas functional analysis is used to examine its relative effectiveness. The equation fitted seems to be significantly explained, a large part of the variability in gross value of crop output (\(y\)), whereas 't' values of the coefficients in respect of working capital in general are quite often statistically significant. The final conclusion that emerged from the analysis was that, although crop loan designed as an innovation to do away with the

\textsuperscript{11}Chowdhari T.P.S and Sharma J. N., “Crop loan system: A study in Andhra Pradesh and Punjab”, National Institute of Community Department, Hyderabad
lacunae in the traditional system of co-operatives production credit, informing the expected benefits was not very much yet in evidence. Due to obvious faults in operational aspect including denial of loans to owner-cultivators, faulty setting of credit limits, inadequate and timely supply of loan, extension guidance in Andhra Pradesh seems to place greater reliance on other sources. They suggested, the removal of short comings noticed and the need to forge much more effective links between credit and production process and management of inputs on farms is very strongly indicated if the crop loan system has really to serve the beneficial purposes for which it was designed.

Mohanan N. (1978)\textsuperscript{12}, this study has been confined to Cannanore district of Kerala. The main focus of the study is to assess credit gaps and to ascertain operational bottlenecks that have emerged in the working of crop loan system. The study revealed that, there was a credit gap to the extent of 93 percent in 1975-76. It is observed that, there was no correlation between eligibility (as per scale of finance) and proportion of loans advanced by the district co-operative central bank. Further, the average amount of loans issued to the borrowers was inadequate and there was no consistency in the flow of credit with the farm size. It is learnt from the study that, farmers do not like kind component of crop loan. Further, technological variations in crop productivity were not

given sufficient attraction while fixing the scale of finance.

Subhas K. Basu (1979), his study analysed on “Commercial banks and agricultural credit: A study in regional disparity in India” examined the distribution of credit to agriculture by commercial banks. He employed regression model, the results indicate that, the co-efficient of variation of agricultural credit for 28 districts per hectare of net sown area is 2.32 as against 1.39, 1.26 and 0.73 as the same co-efficient for per capita outstanding credit, per capita deposit and number of bank offices per lakh of population respectively. The study also revealed that, the inter-district range of farm credit per hectare of net sown area was as wide as 12 paise to Rs.1120.80. This clearly showed that the commercial banks failed to maintain credit per hectare of net sown area, uniformity in the spread of bank offices and regional distribution of credit. Apparently, commercial banks, giving their emphases only on crop loan, it is because banks are safe as for as their advance is concern with respect to quick recovery and turn over. At the same time, productivity of cultivation has been considered seriously.

Puhazhendhi V. & Balakrishanan V. (1981)\textsuperscript{14}, estimated that the pattern and flow of credit in Nilgiris district of Tamil Nadu. The results of the study reveal that, the total credit supplied found to be Rs.2.23 lakhs in the district. The supply of credit doubled from Rs.101.34 lakhs in 1968-69 to Rs.240.89 lakhs in 1977-78, which was advanced taking into account the operating expenses. An analysis of flow of credit indicates that increasing supply has helped in managing inflationary pressure and has not augmented the real purchasing power of the farmers. It is suggested that a purposeful credit policy must necessarily go with stabilization of prices of critical farm inputs. Further, it is essential to give attention to encourage investment credit to build farm assets.

Ashok Kumar (1987)\textsuperscript{15} studied the growth and disparity in agricultural advances by commercial bank in various states. The extent of disparity between the states in different years has been examined with Gini’s Concentration ratios. The compound growth rate of agricultural advance in all states was positively significant and it was increased to 26.6 percent at all India level. The study of Gini’s ratio confirms a declining trend over the period implying that

\textsuperscript{15} Ashok Kumar, “Study of growth and disparity in agricultural advances by commercial bank”, Financing Agriculture, VOL. XIX No. 1 January-March 1987, PP.11-15.
the disparity over the years in the disbursement of bank credit per hectare in different states showed vide variations in its flow between the states. Drawing Lorenz curves tested these findings, which also gives similar conclusion.

**Modi M. K. and Rai K.N. (1992)**\(^1^6\) examined the pattern of flow of institutional credit to farmer in Kurukshetra district of Haryana state. The linear regression analysis technique was used in this study to analyze the data. Regional rural bank observed the highest growth rate i.e. 75.55 percent and all values for growth rate found to be significant at 5 percent level of probability for credit advanced to the agriculture sector & similar result also found for crop loan advancement. The growth rate for credit advanced to allied sector by various institutions was as high as 55.21 percent.

**III. Credit utilization**

**Talukdar K.C, et al. (1979)**\(^1^7\), studied the rural credit availability and extent of credit utilization in East Journal block of Sibsagar district in Assam for the year 1975-76. The total crop loan available to the sample farmers was Rs.63,918. Of which, cash and kind were at 67.79 and 32.21 percent respectively. It was found in the study that 55.69 per cent in cash and

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8.61 per cent in kind diverted to other purposes. The diversion of loan was found to be the higher in case of marginal and small farmers. All the size group of farmers utilized less amount of loan for crop development purposes. Diversion of loan in kind was highest in case of marginal farmers. They suggested that, bankers have to take necessary step in making proper utilization of loan through close supervision and monitoring.

Khatry R.S. and Chamoka S.D. (1982)\textsuperscript{18} in their study on a methodology to measure the utilization pattern of loan advanced by primary agricultural credit societies in Hissar district of Harayana for the year 1978-79. It is revealed from the study that, small and large farmers utilized loan for productive purpose was 53.71 and 67.61 percent respectively. Small farmers diverted of their loan for repayment of old debt or for consumption purpose. But large farmers diverted the loan for consumption and election purposes. They suggested that, to avoid mis-utilisation, small farmers should be given loan liberally for consumption of food and clothing to get them received from the clutches of indigenous bankers.

The bank officials should educate the farmers properly for productive utilization and repayment of loan & should take proper supervison & follow up on the projects on which bank was financed.

Banasal Y.P. and Narwal R.S (1987)\textsuperscript{19} conducted a case study on borrowers differential pattern of farm credit utilization in Hissar district of Haryana state, taking up 138 beneficiaries of Punjab National Bank. It is evident from the study that, 69.56 percent sample borrowers fully utilized, 17.39 were partially utilized and 13.05 borrowers had completely mis-utilised. The possible reasons for maximum mis-utilisation of crop loan were the economic and social backwardness of borrowers. It is thus, suggested that, the system of subsidized loan should be discouraged as far as possible and need for concentration and diversion of loan is essential for proper utilization of credit by the bank officials. Effective human resource development programme should be conducted to the employees working in bank particularly in the credit department.

Singh S.P. and Mruthyanjaya (1992)\textsuperscript{20} assessed credit utilization and overdue of the small and marginal farmers in Aligarh of Uttar Predesh for 1987-88. They used tabular presentation and functional analysis i.e. Cobb-Douglas production function for the assessment of productivity of credit extended to farm borrowers and its effect on overdue. It is observed 70 percent of the crop loan was utilized for crop production and the rest was diverted for


other purposes. Total credit borrowed had a positive impact on the amount of current overdue, while the income from other than crop production and percentage of credit utilization in crop production had negative impact. The regression co-efficients were insignificant. The negative and significant relationship between amount of overdue and percentage credit utilization in crop production indicated that higher the amount used in crop production lower the amount of overdue. They suggested for both internal and external credit rationing and they call for appropriate supervision of credit used at farm level. Further, they stressed that bank has to take necessary pre-sanction scrutiny of the loan applications of the borrowers.

Singh et al. (1992) in a case study of Agra district of Uttar Pradesh, they emphasized the study on availability and utilization of loan. Of the total bank loan availed by the farmers, 84 per cent used for productive purposes. It is noticed that the extent of productive utilization is more in case of investment; loan over crop loan. Thus, it is concluded that, the chances of mis-utilisation is more in case of large and medium farmers is more due to the fact that they take more interest in view of large land holdings. It is also noticed that, utilization of loan in case of PLDB is more as comparing to CB’s. They suggested that, the diversion of loan could be avoided through proper supervision.

Modi M.K. and Rai. K.N. (1993) examined credit utilization pattern of different categories of farms in district Kurukshetra, Harayana. The analysis highlighted that small farmer utilized 68 percent; medium farmers utilized 70.56 percent and large farmers utilized 73.09 percent of total loan availed from the sample bank. Further, crop production credit advance decreased with the size of land holdings. It is evident from the study that, the diversion of credit by the small, medium and large farmers was noticed at 31.34, 29.44 and 26.91 per cent respectively, of the total credit advanced. They concluded that, the borrower is still attracted to the non-institutional sources & the major share of credit was utilized for the productive purposes and suggested for need based loan should be lent to borrowers. The continuous watch on the utilization pattern is a must for proper utilization of credit for productive purposes.

Gupta S. P. (1994) conducted a survey in Raipur district in Chattisgarh region of Madhya Pradesh to study the extent of credit utilized by farmers for productive purposes and impact of crop loan on the productivity and income at farms of beneficiaries and non-beneficiaries. It is noticed that, the percentage of short-term loan to total loan was decreasing as the size of holding increased whereas in case of medium term loan, there is a positive relation.

The utilization of short term loan and medium term loan was 57.15 percent and 42.85 percent respectively. The credit is utilized for purchase of high yielding varieties of seeds, labour charges, tractor rent etc. But in practice, the amount of short-term loan given in cash is utilized for consumption, marriage and other unproductive purposes. Further, it is found that there is positive impact of co-operative credit on technology, income, yield of crops of beneficiaries.

**Bhople R. S., et al. (1996)** highlighted short-term credit utilization behavior of farmers farm co-operative and Gramin banks with reference to Akola district of Maharastra during 1991-92 & 1992-93. It is observed from the study that, the mean percentage of utilization of cotton crop loan by the sample borrowers comes to 60.03 and 65.33 percent in case of DCCB and GB respectively, insignificant difference was noticed in the amount of loan utilized from the District Central Co-operative Bank and Gramin bank. The findings are, borrowers did not use credit at 100 percent due to delay in sanction and non-availability, of inputs in society. They suggest that, for enhancing proper utilization, banks have to disburse loans in time and ensure the availability of required inputs.

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IV. Recovery and overdue analysis

Pradhan J. and Sharma J. S. (1981)\textsuperscript{25} examined the factors discriminating the borrowers with respect to crop loan into defaulter and non-defaulter and willful defaulter and non-wilful at Allahabad bank in Kujang (Orisa). Discriminant analysis was employed with 15 factors, to determine the socio-economic and behaviour characteristics, which classify borrowers into willful defaulters and non-wilful defaulter and to credit whether prospective borrower will be defaulter or non-defaulter, or wilful and non-wilful defaulter. Then, discriminant functions tested by use of Mahalanobis D\textsuperscript{2}. The result reveals that, operated size of holdings, percentage loan utilized for crop production, percentage of cash expenditure and efficiency of loaning were significant between defaults and non-defaulters. Further, it was observed that, the variables education, percentage of total expenditure to total income, percentage of earning adults to total adults were significant between wilful defaulters and non-wilful defaulters. They suggested that, banks should have technically competent staff to disburse loan in time, check the diversion of credit, to assess need for credit to small farmers etc.

Naidu, et al. (1986) examined the socio-economic characteristics associated with defaulters and non-defaulters in Guntoor district of Andra Pradesh. Bayes theorem was used as an analytical model in its discrete form is employed to indicate priori and posterior probabilities with one character at a time for non-defaulters and defaulters with regard to socio-economic character, which significantly explained the difference in utilization pattern of co-operative credit. The sample size of the defaulters and non-defaulters were 72 and 24 respectively.

The socio-economic characteristics associated with defaulters and non-defaulters are caste, occupation, education, operational size of holdings, intensity of cropping, credit gap, loan borrowed, expenditure, annual gross income, off farm income, family consumption expenditure, and amount diverted for non-productive purposes.

The results indicated that borrowers belonging to higher caste, with large holdings, with higher percentage of education, members with higher educated status, with large amount of loans and having higher farm and non-farm incomes had greater probability to become defaulter and suggested, the banking

institution should act with care and caution while dealing with disbursement of loans to farmers keeping in view the socio-economic characteristics associated with defaulters.

Singh A. K. and Balishter (1991) used regression equations (linear and Cob-Douglas) were tried to understand the relative importance of various factors affecting overdues for different categories of farmers in Agra district. The variables considered were operational size of land holdings, amount borrowed, loan used for productive purpose, repaying capacity, cropping intensity & family expenditure. They concluded that, majority factors were affecting overdues. The correlation coefficients of the above variables are found to be significant with overdues. The study suggested that, the loan must be provided to those farmers, who satisfy the technical feasibility and financial viability test.

Shaheena P. and Rajith V. (1991) examined the utilization and repayment performance of crop loan by co-operative in Wynad of Kerala state. An attempt is made to relate the causes of default with socio-economic variables of the borrowers. The primary survey brought out the facts that the crop loans are diverted by some of the farmers for unproductive purposes.

Of whom 35.71 per cent of the marginal farmers mis-utilised due to their economic backwardness. An attempt was also made to analyse the relationship between socio-economic factors and overdues. It is found that, 60 per cent of the farmers have repaid loans in time. Though large farmers are economically sound they also diverted the amount of credit for unproductive purposes comparing to others. It is proved from the results that, socio-economic factors are influencing greatly on the overdue to the co-operatives in the study area.

Hari Kumar S. (1991) in his study an attempt was made to analyse the utilization of loans, overdue and socio-economic factors affecting the repayment performance of the beneficiaries of agricultural loans of regional rural banks in Balasery block of Kozhikode district. The results indicated that, 44 percent of marginal farmers received the loans from RRBs as comparing to small farmers and labourers. The utilization pattern reveals that 51 percent of farmers utilized the loan fully but 74 percent of farmers who availed crop loans were partially utilized. It is clear from the results that, 59 percent of the beneficiaries are defaulters and the factors leading to mis-utilisation are failure of crop and fall in price of products. In this study, $\chi^2$ test is employed to test the association of credit repayment and socio-economic indicators, which is highly significant.

Hugar S.S. and Hundekar S.G. (1995)\textsuperscript{30} studied in their joint paper of recovery management of multi-agency system in Bijapur district of Karnataka. The data was analyzed and interpreted with the help of recovery performance index for examining operational efficiency of banking system. The unhealthy recovery climate has adversely affected on the repayment behavior of RRB. The sectoral recovery performance in agricultural sector is at a higher significant level in case of commercial bank as comparing to RRB and co-operative banks. But the situation is reverse in case of small-scale, cottage and industrial sector and tertiary sector. They suggested that, the effective strategic management tool useful improving recovery performance by continuous & timely evaluation and monitoring and strict and stringent supervision & controlling of learning system help to increase the recovery performance of banking sector. Further, stressed the elimination of loan waiving and subsidised interest schemes for the effective need-based financing to the target group.

Monsur et al. (1995)\textsuperscript{31} tackled to study the loan recovery of agricultural credit of the banks and factors affecting the recovery in rural branches of


Bangladesh for 1985 and 1989. It is observed that, there is decrease in agriculture credit by 15.25 percent and increase in recovery and overdues increased by more than eight times in 1989 as compared to 1985. The factors responsible for poor credit recovery is assessed as: damage of crops due to flood, negative attitude, lack of legal action, corruption in bank, benami loan etc. It showed that 59.53 percent of the total loan spent for productive purpose and highest percentage of loan utilized properly & lowest by the small farmers. It was found that, untimely disbursement causes the use of credit for unproductive purposes and affecting on recovery performance. Further, most of the sample branches are poorly staffed, this causes poor recovery performance.

Ramachandra Reddy D. (1995), analyzed impact of socio-economic characters of borrowers in co-operative overdues in Cuddapah district of Andhra Pradesh. The chi-square test was employed to establish relationship between non-wilful defaulters to wilful defaulters and between defaulters and non-defaulters with different socio-economic characteristics. Regression analysis was used to estimate different degrees of variables, which are influenced on wilful and non-wilful defaulters. The function is tested to examine whether the characteristics considered together are sufficiently

discriminating between willful and non-willful defaulters. The discriminant function is used to predict whether a defaulter is likely to be a willful defaulter or not. The mean values of willful defaulter and non-willful defaulter are significant for the selected socio-economic indicators.

Sharma R. K. et al. (1995) assessed factors affecting rural credit in Himachal Pradesh. They analysed, factors responsible for overdues, relationship between overdue and various socio-economic factors and analyzed different problems experienced by the selected households in obtaining the bank loan. The chi-square test was employed to verify the association between socio-economic indicators and overdues. The selected socio-economic indicators in this study are caste, education, age and family size. The analysis revealed that socio-economic indicators which influenced the repayment behavior of the borrowers significantly. Thus, the results showed that the socio-economic factors were important for overdues. Further, family size and farm business income were vital variables for explaining variations in overdues. It was observed that non-farm expenditure needs to be reduced particularly by small farmers and should enhance income by employing in other farms enable them to repay loan in time to avoid overdues. They stressed in their study that

bank procedure should be simplified for timely and adequate amount of loan being advanced to the farmers.

V. Assessment of performance of banking institution

Goyal S. K. and Pandey R. N. (1988)\textsuperscript{34} emphasised that, the real trend analysis of Primary Agricultural Co-operative Credit and Services in Hissar District of Haryana state. Two branches were selected at random to analyse the growth and performance in loan advanced, demand and overdues. The exponential function is used to know the growth prospectus for 5 years from 1977-78 to 1984-85. There is a significant result in membership, deposits, loan outstanding and overdues at 1 percent probability. From the analysis it is concluded that, the highest CGR was recorded for overdues, is not a healthy sign, it indicates that, there is a poor recovery of advances, thus effort should be made to recover the loan promptly.

Indira Devi P. et al. (1992)\textsuperscript{35} analysed the progress of Co-operative Agricultural Credit Society in Kerala between 1976-77 to 1987-88. To estimate credit requirement, trend in growth of credit and assess the performance of

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credit in relation with credit employed by semi-logarithmic technique. They emphasized that the credit supply has increased at a rate of 17.2 percent per annum. The impact of bank credit on paddy reveals that credit supply has not helped to increase production of paddy. In case of sugarcane the share of credit supply had a rise of 628.25 percent. During this period the area, production and productivity of this crop has decreased. It is revealed by the analysis that, the productivity factor contributed more to fall in production. The correlation analysis with both production and productivity showed a significant negative correlation. The reason is that amount of credit sanctioned is not utilized properly for productive purpose. The real fact for this behavior is worth studying. But in case of banana and cashew showed a significant correlation. It is ascertained that due to increase in the cost of input, the demand for farm credit is bound to increase in the future.

Hem Chandra Lal Das (1993) evaluated the performance of commercial banks in regard to expansion of banking services to unbanked areas in the regional perspectives, and evaluation of the performance with regard to credit advances to the priority sector. The regional disparities in the distribution of bank offices and population have been studied with the help of Gini's coefficient of correlation. Inter-regional variations in distribution of bank

offices, bank-deposits and bank credit were studied with coefficient of variations.

The results indicate that the existence of uneven distribution of bank offices, which leads to growing inequality between one state with others. It shows, there is a regional disparity in the distribution of bank offices in relation to population. This unevenness cause for the inadequate services provided by commercial banks in regard to supply of short term loans in different regions.

**Bhaskar G. et al. (1995)** they assessed the performance of District Central Co-operative Bank of Karimnagar district of Andhra Pradesh. The objective of the study is to examine the progress and performance of D.C.C.B from 1987-88 to 1991-92. It is clear from the analysis that the bank is operating under losses with heavy amount of overdues. Lack of co-operation and active involvement on the part of the rural masses are also other basic weakness of the sample bank. They also emphasized, the repaying capacity of the farmers is badly affected by the rising prices of agricultural inputs, lack of irrigational facilities etc. It is ascertained from the study that, the effective action should be taken to recover overdues and there is a need of an hour to

establish proper link between staff and management for active involvement in the day-to-day banking operations. Further, they stressed that; effort should be made to mobilize more amounts of deposits.

Hosamani S. B. (1995)\textsuperscript{38} evaluated the performance of Malaprabha Grameen bank in Belgaum and Dharwad district of Karnataka state. To analyse the performance of bank, physical and financial indicators were considered. Discriminant analysis, financial ratios, Gini's coefficient analysis, principal component and factor loading analysis were employed to test the variables. The results of the study revealed that there was a substantial increase in both physical and financial indicators. It is found that, the bank is performing well in respect of mobilization of deposits, advances, branch expansion and customer service. Further, the study reveals, that the customers encountered the problem of insufficient credit facility, cumbersome procedure and absence of technical guidance. Finally, the study stressed that, the bank should, follow strategic planning, implementing, organizing, co-ordinating, supervising and controlling all functions neatly for greater performance. Further, the study enlighten that, the importance should be given for the development of human resources and infrastructural facilities for greater profitability in due course.

Ravivarma S. and Bhagawan Reddy B. (1998)\textsuperscript{39} evaluated the performance of DCCB in Chittoor district of Andhra Pradesh. The indicators used in the evaluation of performance and progress of DCCB is capital credit operation and recovery efficiencies. A comparative analysis is made between pre-loan and post-loan period of single window co-operative delivery system. The result revealed that, the average performance in DCCB of AP is related high when compared to DCCB in Chittoor in the old and new systems. They suggested that, the step should be taken to launch vigorous deposit mobilization campaigns to achieve a minimum growth; more provision for investment credit, (term loan) rigorous step should be initiated for effective recovery.

Dilip K. et al. (1998)\textsuperscript{40} analyzed the working of District Central Co-operative Bank in Vadodara district, in the state of Gujarat. The objectives of the study are to assess growth of working capital, pattern of deposit and credit and overdue position. These are a significant result in the performance and growth of deposits, working capital and recovery. It is observed that, bank is yet to diversify loan portfolio, achieve profitable deposit mix and effective recovery performance.

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The study suggested that, a large scale of finance is fixed for cultivation of sugarcane; recovery cells need to be created to monitor and follow-up the bank credit and initiated for large deposit mobilization.

**Deepak Shah, (2000)**[^41] analyzed the performance of primary agricultural co-operatives in Maharashtra both at macro and micro level. Semi-log exponential form was employed to analyze the trend in share capital, membership, advance, deposits, recovery and overdues for the period of 15 years from 1981 to 1995. All growth rates are significant at 1 percent level of probability. Due weightage is also given on new reforms of banking applicable for liberalization process. Though there is considerable increase in their numerical strength, still there are deficiencies in the functioning of PACB in the Maharashtra state. The deficiencies noticed in respect of their low operational efficiency, high incidence of overdues, low recovery, distribution of ST and MT loan, coverage of SC and ST members etc. He suggested that, there is an urgency of formulation of policies by Government to safeguard small and marginal farmers and the effective steps should also be taken to recover chronic overdues.

VI. Lending and borrowing problems:

Kadian R.S. and Bangarwa B.S. (1983)\(^{42}\) examine the problems faced by farmers in borrowing loans from Punjab National bank Rohatak district Haryana. The results found to be were 42 percent of medium farmers faced the problems of high rate of interest, untimely loan, 22 percent medium farmers harassed by bank officials and inadequate loan, whereas, small farmers expressed, harassment of officials and complicated procedure. It is noticed from the study that, large farmers facing in different problems as comparing to small and medium farmers. They suggested for, technical guidance, decline in rate of interest simple procedure, timely loan and adequate finance for improving banking facilities.

Raj Kishor Pany (1985)\(^{43}\) conducted study on institutional credit for agriculture in India. The study, has classified the problems faced by borrowers in availing loans into three categories, namely structural, operational & others. The results of research study revealed that structural problem is mainly with co-operatives. The operational deficiencies have been examined mainly from the point of view of their loan policies and procedures.

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These problems were faced by co-operatives and commercial banks. The main structural problems were working capital deficiency in case of co-operatives. The operational problems are, inadequate scale of finance, security oriented financing, unsuitable loaning procedure.

Mohd. Abdhul Rub. et al. (1990) in their study they analysed the problems of the farmers with regard to agricultural credit in Prabhani district of Maharashtra. It is found from the study that insufficient of loan and difficulties in getting loans were the major problems faced by sample farmers, followed by lack of technical advice and difficulty in providing surety. They suggested that, sufficient loan should be provided, extension of period for repayment in easy installments, technical guidance to farmers & simplification of the procedures.

Umesh Chandra Gupta (1991) studied the problems of agricultural finance in Rohilkhand division of Uttar Pradesh. The study pointed out that, the problems in obtaining documents from revenue officials processing of loan applications, time taken for processing loan application in getting guarantors, inadequate knowledge of bank assistance, farmers lethargy.

Similarly, the study examines the problems faced by bankers in lending loans namely processing problems, and procedural problems, organizational problems and problem of co-ordination from Government officials. The study also stressed that, an urgent solution should be found by banking institutions to provide banking assistance at the doorsteps of farmers without any problem to achieve marked productivity.

**Rekha Gaonkar (1993)** evaluated on the problems of agricultural finance in commercial banks of Goa state. The research study highlighted general problems faced by banks, problems faced by selected bank officials and the problems encountered by farmers in obtaining loan from sample banks. The difficulties faced by selected commercial banks were non-availability of documents, inadequate infrastructure and marketing facilities, inadequate staff, lack of credit demand, recovery problems, environmental problems and strong competition from other banks etc. The study listed the problems faced by farm borrowers such as complicated procedure, delay in getting records, lack of knowledge of rules, non-co-operations of bank staff, inconvenient working hours, inadequate transport facilities etc. Further, the study suggested that, educate the borrowers on repayment ethics, simplification of lending practices

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and procedures, proper training to bank officials are the important aspects help in improving the efficiency, profitability and customer services of banking industry.

VII. Risk Management System in Banks.

Narayana (1992)47 examined the performance of institutional credit programme for rural development that attempts to improve poor loan recoveries with proper risk management concepts. The study enlightened that, in the absence of income, farmers exposed to severe risks, which are likely to default on bank loans particularly in the year of natural catastrophies. The measures taken to reduce these types of risks may be waiver of interest or principle sum. These risks affect on the stability of banking institutions. The study stressed the group lending programme would be the solutions to larger problem of risk management. Further, the study enlightened that, the size group of “Group lending programme” should be small to achieve recovery performance. Of the two alternatives, he stressed group lending programme is most appropriate from the viewpoint of bankers rather crop insurance scheme.

Hanamantha Raj B. N. (1997) studied the risk management in agriculture advances. The study classified that, the risks into anticipated risks and unanticipated risks. Further, risks classified into four types, pre-sanction phase, sanction phase, implementation phase and post-disbursement phase. These risks can overcome with the help of strategic management principles such as, human resources management measures, fixing repayment schedule, replacement of installment, issuance of quarterly notices for recovery, honouring prompt borrowers etc. It is suggested that, like any other advances, agricultural advances too risky. It is essential that the manager should understand such risks and should find proper solution to achieve profitable goal.

VIII. Impact of bank finance

Chandrasheker Singh et al. (1986) studied the impact of Gramin bank loaning on agricultural development in the district of Ballia of U.P state. The result clearly indicates that this was increase in irrigational facilities; intensity of cropping was higher, number of crops and higher income in post borrowing period. It is concluded that, loaning facilities have significant impact.

on investment in irrigated area, which had increased from 79.99 to 89.77 per cent the average cropping intensity rose from 141.73 to 169.37 per farm, and the farm net income rose from 972.55 to 1743.05 percent during post loan period. The authors proposed some suggestive measures for betterment of qualitative improvement in bank finance such as in time supply of loan, ease of procedure proper training to staff, & adequate finance.

**Pawar S. S. and Bhuvanendran P. (1992)**\(^50\) conducted a study on impact of long term financing on tribal economy in Jhabua district Madhya Pradesh. The indicators selected for study were income production and social status in pre-loan and post loan period. The statistical tools applied to get the qualitative outcome of the study were percentage and ‘t’ - test. The ICSSR Delhi analyzed the primary data. The study reveals that, as a result of bank loan there was an increase in production, income and social status in case of all size farm loan beneficiaries. An average 55 per cent borrower benefited due to the bank loan.

**Krishnama Raju S. (1992)**\(^51\) emphasised the impact of bank credit on income, employment and asset creation in agriculture, animal husbandry and tertiary sectors in Chittoor district of A.P. To study the impact of bank credit


‘t’ test and regression techniques are used. It is noticed that, there is positive relationship between the amount of loan disbursed with income, employment and asset position the activities financed and periods in pre-loan and post loan periods and the results are found to be significant. Further it is observed that, the quantum of assistance provided to the beneficiaries is insufficient and it is essential to enhance the finance as per their credit needs.

Ramana Reddy V. V. (1991)\textsuperscript{52} evaluated the impact of institutional finance on farmers in Chittoor district of Andhra Pradesh. The ANOVA test is used to measure the effect of institutional credit on farm business income, the comparison of farm business was made between barrowers and non-borrowers. The study revealed that, the total credit requirements of the farmers particularly small and marginal farmers were adequately met by institutional agencies. The difference in distribution of size of institutional finance in different regions is insignificant. There is no significant difference in the distribution of farm business income between beneficiaries and non-beneficiaries. The study suggested that, lending agencies should discourage subsidised credit. Similarly, effective and timely lending leads to effective utilization of credit and possibilities high recovery to lender.

Jaya. S Anand (1998)\textsuperscript{53} conducted a study on impact of term credit on rural masses in Thiruvanatapuram district. The study examined the impact of credit on agriculture income, in three sectors (minor irrigation, ordinary loans and non-farm sectors). The increase in farm income as a result of new investment is estimated taking data on pre-loan and post-loan periods of beneficiaries and non-beneficiaries. The paired ‘t’-test is employed to ascertain variation in generation of income for three sectors and regression technique is used to examine whether the incremental income of the sample beneficiaries on post loan period is the result of bank credit or not. The result revealed that, there is a significant increase in the average income between pre-loan & post loan of the beneficiaries, borrowed MI, OL and NFS were found be positive impact of bank loan.

Sarker P.C. (1999)\textsuperscript{54} analysed on role of bank financial institutions in Indian economic development, the study highlighted on the impact of bank credit on agriculture and other sectors of the economy using Granger’s Causality Test. This study showed that, growth of banks and financial institutions in India was highly appreciable. It also tested, the impact of the bank credit on the growth of agricultural and other sectors.

The empirical results suggested that, the direction of causality in agriculture was from GDP to bank credit implying that the demand for bank credit was influenced by the agricultural output. As against agriculture, unidirectional causality is showed and in case of imaging and quarrying sector reflected bilateral or feedback causality. The study stressed that, there is a need to provide sufficient bank credit to agriculture sector on continuous basis. If there is higher agriculture production in particular year then there is less demand for bank credit in the following year.

Puhazhendhi V. and Jayaraman B. (1999) studied the development of the rural credit delivery system in the country and impact of bank credit on agricultural production and reduction of poverty due to increased flow of credit. They used regression analysis to estimate the impact of bank credit on input and output usage. It indicates that, there was significant and positive impact on credit extended by bank to beneficiaries on level of input used, which in turn had a significant and positive impact on the gross value of output in agriculture. The result revealed that, 56.6 percent of the beneficiaries assisted under Integrated Rural Development Programme could cross the poverty line at the national level and showed a positive development in agriculture.

Need for the study

The foregoing discussion on review of literature reveals that, great deal of work has been carried out, emphasising micro and macro level aspects of institutional credit for agriculture. The studies focussed on credit requirement, flow of credit, credit utilization, recovery and overdues, geographical expansion of banking network. These studies emphasise on particular bank in a single village, taking single aspect cited above. Till today, no study has focussed on scientific estimation of credit requirement, factors affecting credit utilization and problems, emphasising on two facets from the angle of borrowers and bankers, impact of bank finance on income, employment and asset creation taking three types of banks by covering all the above aspects in toto.

Against this backdrop, it is felt that, there would be a lot of scope and relevance for a comprehensive and analytical study at micro level with regard to sugarcane growers encompassing various important dimensions of bank finance to sugarcane growers. Hence, Belgaum district has been chosen as the study area considering above dimensions to this micro level study as “Bank Finance to Sugarcane Growers in Belgaum District”.

The study intends to provide insights into problems faced by bankers and borrowers (sugarcane growers) in more analytical and critical way. The
study should represent a cross between bankers and borrowers in understanding one another ultimately benefit the borrowers.

It can be foreseen from the above study that, it would be a strategic weapon for bankers and policy makers in regard to financing sugarcane growers in particular and agriculture in general.

**Objectives of the study**

The present study was undertaken with the following objectives in view:

1. To analyse the pattern of credit flow among different size groups of farmers and the factors influencing the credit utilization.
2. To estimate the credit requirements of sugarcane cultivation.
3. To identify the problems faced by sugarcane growers in availing credit from the banking institutions.
4. To assess the recovery performance.
5. To ascertain the factors associated with recovery performance.
6. To identify problems/risks encountered by bankers in lending loans to sugarcane growers.
7. To assess the ways and means of administering credit through evaluation and monitoring.
8. To examine the impact of bank finance on income, employment and assets creation of sugarcane growers.
9. To suggest appropriate policy measures.
Hypotheses

Keeping in view the research objectives, the study intends to test the following hypotheses:

$H_1$ There is uneven disbursement of credit to different size group of farmers.

$H_2$ Farm characteristics influencing the allocation of farm credit and credit utilisation.

$H_3$ Loan borrowed is less than the required amount of loan.

$H_4$ Sugarcane growers are put to lot of hardships in availing loans.

$H_5$ The recovery performance depends on the percentage of the defaults.

$H_6$ Socio-economic characteristics of the borrowers influence the recovery performance of the lending agencies.

$H_7$ There is better administration of credit through evaluation and monitoring by the banks and the banking institutions equally faced the problems in lending loans to sugarcane growers.

$H_8$: The problem of overdues depends on the of factors considered with regard to elimination of risks in lending loans.

$H_9$ The bank finance has positive impact on income, employment and asset creation of sugarcane borrowers.
Scope of the study

The present study attempts and confines itself to evaluate the bank finance, that is lending practices, which includes, credit disbursement, estimation of credit, its utilization, overdues problems and recovery practices and problems faced by sugarcane growers in obtaining loan from banking institutions.

The study relates to, bank finance to agriculture in general and to sugarcane cultivation in particular.

'Banks' for the study purpose include, Commercial bank, (Union Bank) in Ainapur, Co-operatives (Primary Agriculture Co-operative Bank Limited and Primary Co-operative Agriculture and Rural Development Banks) in Examba and Regional Rural Banks, (Malaprabha Grameen Bank) in Gandigawad.

The 'credit' is restricted only to production loan (crop loan) and investment credit (term loan) requirements of the sugarcane cultivators. Again, investment credit includes, term loan for land development, irrigation, farm mechanization and other farm development purposes.

The study covers commercial bank in Ainapur village of Athani taluk, Malaprabha Grameen Bank in Gandigawad village of Khanapur taluk and Co-operatives in Examba village of Chikodi taluk in Belgaum district.
The study is restricted to only four banks, financed in Ainapur, Examba, and Gandigawad. The findings of this study may not be applicable to other areas. It covers the reference period “between” 1989-90 to 1999-2000.

Research Methodology

The present study confines itself to investigate into the bank finance to sugarcane growers in the study area. The methodology adopted in this study is presented under the following heads:

1. Data base
2. Sampling design and
3. Analytical techniques used

1) Data base

The data so collected used for evaluating objectives of the study pertained to the area under research conducted in Belgaum district. The data used in this study, based on primary and secondary sources, discussed below:
Chart-1.1
Multi-stage sampling design
Agricultural zones in Belgaum district (As per Gazetteer)

Stage-1 Zones
- North Dry Zone
- North Transitional Zone
- Hilly Zone

Stage-2 Taluks
- Athani
- Chikodi
- Khanapur

Stage-3 Villages
- Ainapur
- Examba
- Gandigawad

Stage-4 Banks
- Commercial Bank
  1. Union Bank of India
- Co-operative Bank
  1. Primary Agricultural Co-operative Bank limited (Short-term)
  2. Primary Co-operative Agricultural and Rural Development Bank (Long term)
- Regional Rural Bank
  1. Malaprabha Grameen Bank

Stage-5 Farmers (100 farmers in each village)

<table>
<thead>
<tr>
<th>Size- Holdings</th>
<th>SF (10% (0-5 acres))</th>
<th>MF (5.1-10 acres)</th>
<th>LF (0-5 acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF</td>
<td>44%</td>
<td>29%</td>
<td>27%</td>
</tr>
<tr>
<td>MF</td>
<td>27%</td>
<td>70%</td>
<td>19%</td>
</tr>
<tr>
<td>LF</td>
<td>19%</td>
<td>11%</td>
<td>67%</td>
</tr>
</tbody>
</table>

(One sample village is selected from two highest sugarcane growing areas taking one sample bank of Co-operative, Commercial and Regional Rural Banks)
i. Primary data

In order to gather the primary data, exploratory interviews were conducted with sugarcane growing borrowers and bankers in the study area. Besides, a survey method is used, in which, the structured schedule to farmers and questionnaire to bankers, administered respectively.

a. Interview schedule

Interview schedule was prepared to elicit the data from sugarcane growers who availed loan from sample banks. This was pre-tested with pilot study. Most of the information furnished by respondents depends on their capacity to memorize. However, doubts, if any, were clarified with cross-examination using personal judgment. The interview schedule is drawn keeping in view research objectives (Appendix-I).

b. Questionnaire

Well-structured a pre-tested questionnaire was prepared to elicit information on bank credit from sample banks. The questionnaire was served through post to sample banks and personal interview was also held, in case of doubtful information (Appendix II).
ii. **Secondary data**

The study is also based on secondary data, which were sought from the following sources:

1. District Statistical Office, Belgaum
2. District Lead Bank, Belgaum (Annual Action Plan, District Credit Plan, LBR)
3. NABARD, Belgaum District (Potential Linked Credit Plan)
4. RBI bulletins and Reports on Currency and Finance
5. Directorate of Agriculture, Belgaum
6. Assistant Directorate of Agriculture (All taluks)
7. Union Bank of India Ainapur, Malaprabha Grameen Bank of Gandigawad, Primary Agriculture Co-operative Bank limited of Examba, Primary Co-operative Agriculture and Rural Development Bank of Chikodi
8. Periodicals, Journals and Books.

2. **Sampling design**

A multi-stage stratified random sampling technique was adopted for the collection of required data. The sampling design adopted in the study is presented in chart-1 and its stages are discussed as under:
i. Selection of zones in the district

The Belgaum district is selected purposely to study the problems of sugarcane growers in availing loan from the banks. The district is divided into three agricultural zones, (based on Belgaum district Gazetteer) they are North Dry Zone, North Transitional Zone and Hilli Zone.

ii. Selection of taluks

At the second stage, sample taluk is selected based on highest sugarcane growing area in each agriculture zone of the district. Accordingly, Athani taluk in North Dry Zone, Chikodi taluk in North Transitional Zone and Khanapur taluk in Hilli Zone (Appendix III).

iii. Selection of sample villages

At the third stage, sample villages were selected from each sample taluk, based on two criteria. At the first step, selection of two villages from each taluk based on the highest sugarcane growing area for 1999-2000 and in second stage of the two villages, one sample village is selected keeping in view the type of bank branch operating. Accordingly, Ainapur, Examba and Gandigawad were selected for the study (Appendix-IV).
iv. Selection of Banks

At the next stage, a bank branch from co-operative, commercial bank and, regional rural bank is selected in sample villages. Accordingly, Primary Agriculture Credit Co-operative Limited in Examba (short-term), Primary Co-operative Agriculture and Rural Development Bank (long term) in Chikodi, Commercial Bank in Ainapur and Regional Rural Bank in Gandigawad were selected for study.

v. Selection of sample beneficiaries

At the last stage, 10 percent of sample beneficiaries were drawn from the district sample farm size group at farmers. (Appendix V) In equal to this size group of sugarcane borrowers, a list was obtained from sample banks in the study area, keeping in view, the size of landholdings, type of loan availed, overdues/NPA accounts. From each of these banks 100 beneficiaries were selected randomly for the study.

3. Analytical techniques used

The data was entered into computer and analysed by SPSS (1993) and STATISTICA (1985) statistical packages by using different statistical techniques.
A) Trend Analysis: (Chapter – 2) To analyze the trend of area, production and productivity of sugarcane, the following different functional forms were selected (Borthakur S. and Bhattacharyya).

i) Linear function: \( y = a + bx \)

ii) Quadratic function: \( y = a + bx + cx^2 \)

iii) Exponential function: \( y = a b^x \)

Where \( x \) is the time variable, \( y \) is the variable for which growth rate is calculated and \( b \) is the regression coefficient of \( y \) on \( x \).

B) Karl Pearson’s correlation coefficient:

The technique was performed to study the association as well as direction of strength between:

i. area, production and yield (Chapter -2)

ii. in pursuance with the objective 1, the characteristics of sugarcane growers with crop loan and term loan borrowed, (Chapter -4)

iii. loan utilization and repayment under different size groups. (Chapter -4)

iv. evaluation and monitoring & overdues of sample banks. (Chapter -3)

v. risks faced by banker and overdues of sample banks. (Chapter -3)

C) Student’s ‘t’ test:

i. to test the significance of growth rates and correlation coefficient. (Chapter –2)
ii. to test the value difference between 75% of Variable Cost v/s Crop Loan and 75% of Total Cost v/s Total Loan. (Chapter –4)

iii. to test the difference between Pre Loan and Post Loan among Income, Employment and Asset Creation. (Chapter –5)

D) ANOVA:

The One-Way and Two-way Analysis of Variance (ANOVA) were used to see the significant differences between three or more than three variables.

E) Regression Analysis:

The multiple linear regression models were used to examine:

i. the increase or decrease of bank branches in Rural, Semi-urban, and Urban areas for different years from 1990 to 2000. (Chapter –2)

ii. the strength of relationship between total bank credit and the amount used for productive and non-productive purposes. (Chapter –4)

iii. the increase or decrease in various bank credit for different years from 1990 to 2000. (Chapter –2)

iv. in pursuance with the objective 8, the impact of bank finance on incremental increase in income, employment and asset creation of selected sugarcane growing borrowers in the study area. (Chapter –5)
The model is given as below:

\[ Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 +, \ldots, + b_{15} X_{15} \]

\( X_1 = \) Land holdings,
\( X_2 = \) Loan borrowed
\( X_3 = \) Income other than sugarcane
\( X_4 = \) Farm expenses
\( X_5 = \) Household expenses
\( X_6 = \) Area under irrigation
\( X_7 = \) Loan utilization
\( X_8 = \) Repaying capacity
\( X_9 = \) Overdues
\( X_{10} = \) Age
\( X_{11} = \) Education
\( X_{12} = \) Family size
\( X_{13} = \) Food consumption
\( X_{14} = \) Area under sugarcane
\( X_{15} = \) Yield under sugarcane
\( X_{16} = \) Sugarcane Income (in case of employment and asset creation)

Where, \( y \) = Regression line (income, employment and asset creation of borrowers separately), ‘\( a \)’ is an intercept and ‘\( b_i \)’ (\( i = 1, 2, \ldots, n \)) are regression coefficients and ‘\( X_i \)’ is (\( i = 1, 2, 3, \ldots, n \)) independent variables.
F) Discriminant Analysis:

In pursuance with objective 5, to identify the factors, which are responsible for repayment of loan, discriminant analysis was used. This analysis helps to know the relative importance of different variables in regard to their power to discriminate defaulters and non-defaulters as well as wilful and non-wilful defaulters. This function enables to know whether any borrower likely to defaulter or non-defaulter and also he is wilful or non-wilful defaulter on the basis of factors selected. The discriminant function used in the study could be mathematically represented as follows: (Chapter –3)

\[ Z = L_1X_1 + L_2X_2 + L_3X_3 + \ldots \ldots + L_{13}X_{13} \]

Where,

- \( X_1 = \) Operating size of the holdings (in acres)
- \( X_2 = \) Percentage of irrigated area to total area
- \( X_3 = \) Age of the borrower (in years)
- \( X_4 = \) Education
- \( X_5 = \) Family size
- \( X_6 = \) Per capita income from sugarcane crop
- \( X_7 = \) % of income from source other than sugarcane crop to total income
- \( X_8 = \) Total amount of loan borrowed
- \( X_9 = \) Percentage of loan utilized
- \( X_{10} = \) Percentage of farm expenditure to total income
XI1 = Percentage of household expenditure to total expenditure
XI2 = Percentage of working members to non-working members
XI3 = Per capita food consumption and

Where, Li (i = 1, 2, ..., n) linear discriminant coefficients

Using the mean values and mean differences of the variables between non-defaulters and defaulters, wilful defaulters and non-wilful defaulters, the 'dl 'coefficients are used. Then the discriminant functions were tested for significance by the use of the Wilk's $\lambda$- criteria, statistic that measured significant discriminating variables in the model.

F) Chi-square test:

The chi-square test was used to calculate the association between the problems faced by the borrowers in availing loans and between all size groups of farmers (small, medium and large). (Chapter -4)

The formula is as follows:

$$ \chi^2 = \sum_{i=1}^{n} \left( \frac{(O-E)^2}{E} \right) $$

Where O = observed cell frequency and E = Expected cell frequency

G). Use of ranking and scoring techniques (chapter- 3)
Chapter design

The present study is divided into six chapters:

1. Introduction

The chapter one covers, introduction, importance of bank finance to sugarcane growers and its rationale, statement of the problem, review of existing literature, need for the study, objectives and hypotheses of the study, scope of the study, research methodology, chapter design and the concepts used in the study.

2. District and banking profile of Belgaum

The second chapter highlights the profile of the district, growth and prospects of sugarcane and importance and growth of banking sector in Belgaum district.

3. Management of farm credit: Banker's perspective

It is the third chapter, emphasis on performance of banking, network, credit pattern, overdue syndrome and recovery management, problems / risks in lending and evaluation and monitoring of lending by sample banks to sugarcane growers in the study area.
4. Banking assistance to sugarcane growers: A field study

The fourth chapter, focuses on analysis of source and pattern of credit disbursement, estimation of credit requirement, and problems in borrowing loan from banks in the study area, credit utilization and repayment performance of the borrowers.

5. Impact of bank finance on sugarcane growers

The Chapter five, a crucial study, deals with impact of bank finance on sugarcane growers’ (borrowers’) income, employment and asset creation in the study area.

6. Findings and suggestions

The final chapter provides summary of the findings of the study followed by suggestions for appropriate policy measures for improving banking assistance to sugarcane cultivation.

Concepts used in the study

1. Recovery: Recovery of loan means realization of debt schedules to be repaid by borrowers immediately after the expiry of the period of loan.
2. Bank finance: Financial facility provided by commercial bank, regional rural banks, and co-operative banks in the study area.

3. Farm credit: The amount of credit advanced by banks for different agricultural activities.

4. Defaulters: The borrowers who had availed loan but could not repay it before stipulated date agreed at the time of availing loans.

5. Non-defaulters: The borrowers who had availed loan and had repaid within the stipulated period at the time of availing loan.

6. Overdues: Overdues are conceptualized as, the amount of credit provided by the bank, which has become due for repayment along with interest but which has not been paid by the borrowers.

7. Current overdues: Overdues belonging to customer held by banks below 3 years period.

8. Chronic overdues: Overdues belonging to borrowers held by the banks over and above 3 years period are described as “hardcore overdues”. These chronic overdues might be attributed either to poor repaying capacity or wilful default.

9. P.L.P : Potential linked plan prepared by NABARD for each district at the end of the period.
10. Banking system: All banking institutions working in the study area, put together are called banking system, which include, commercial banks, regional rural banks and co-operative banks.

11. Credit gap: This refers to the difference between the amount of credit requirement of the farmer beneficiaries and actual amount of loan provided by the bank.

12. Credit utilization: If the credit disbursed by the bank is utilized by the borrowers in full, for the purposes for which the loans were originally disbursed. Otherwise, it is termed as mis-utilisation of credit.

13. Co-operative: Co-operative includes, primary agricultural co-operative bank limited and primary co-operative agriculture and rural development bank.

14. Repayment capacity: The excess of income of beneficiaries over their expenditure (farm expenditure and domestic expenditure).

15. Size groups of farmers- (working purpose)

<table>
<thead>
<tr>
<th>Category of farmers</th>
<th>land holdings</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Small farmers-</td>
<td>0 to 5.0 acres</td>
</tr>
<tr>
<td>ii. Medium farmers-</td>
<td>5.01 to 10 acres</td>
</tr>
<tr>
<td>iii. Large farmers-</td>
<td>above 10.01 acres</td>
</tr>
</tbody>
</table>