

**REFINANCE OPERATIONS OF THE NATIONAL
BANK FOR AGRICULTURE AND
RURAL DEVELOPMENT - THE KERALA EXPERIENCE**

*Thesis submitted to the
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
for the award of the degree of*

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in

ECONOMICS

under the faculty of Social Sciences

By

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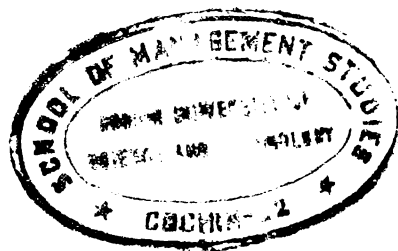
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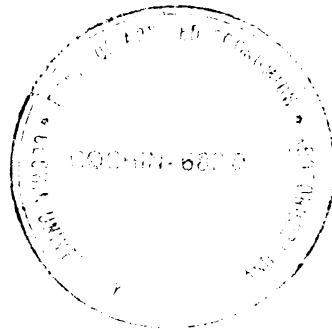
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DECLARATION.

I declare that this thesis is the record of bona fide research carried out by me under the supervision of Dr. K. Krishnan Nampoothiri, Reader, School of Management Studies, Cochin University of Science and Technology. I further declare that this thesis has not previously formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title of recognition.

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GLOSSARY

A brief explanation on some of the important concepts and terms used in the chapters are given below:

2.1 Agent/ Client Banks :

In the study the Commercial Banks and State Land Development Banks, which act as the agent or client for disbursing NABARD's funds, are referred to as client/agency banks.

2.2 Eligibility Criteria :

The 'Eligibility Criteria' refers to the eligibility required for the agent bank to draw refinance from the National Bank. The annual recovery rate is taken as a percentage to demand. The eligibility for drawal of refinance is categorised into two. Category A refers to the annual recovery rate of 60 per cent and above which allows unrestricted drawal of refinance. Category B refers to a position where the annual recovery rate is below 60 per cent. Here the eligibility to draw refinance during the period would be limited to the extent of the amount recovered in the year ending 30th June of the previous year or the average amount recovered/lent in preceding three years whichever is greater.

2.3 Schematic Refinance/ Lending :

It refers to the scheme-based long-term lending by the National Bank. Scheme-based lending necessitates formulation of a scheme for the concerned project for the prior approval of the National Bank.

2.4 Rubber Plantation Development Scheme :

The scheme is intended to increase the production of natural rubber in India by accelerating new planting and replanting of rubber on modern scientific lines. NABARD provides refinance assistance for the scheme on a per hectare basis, depending upon the prevailing unit cost.

2.5 Minor Irrigation Scheme :

The investments under this scheme are intended to provide irrigation facilities on a micro basis for cultivated crops. These investments include new well, pumpset and new well together with pumpset.

2.6 Unit Cost :

The approved cost by the National Bank for each unit of investment, eg. for Rubber Plantation Development Scheme, Minor Irrigation Scheme etc. is referred to as unit cost. The unit costs as approved by NABARD may be treated as indicative cost only and banks are at the liberty to vary the cost wherever necessary.

2.7 Commitment-Disbursement Gap :

It refers to the gap between the commitment of refinance by the National Bank and the actual amount disbursed by the agency banks or utilised by the beneficiaries at the grass-root level.

2.8 Imbalances :

It refers to the regional and sectional imbalances in the quantum flow of NABARD's refinance.

2.9 Non-Beneficiaries :

They refer to a group of farmers who have not availed any loan but have the unit implemented with their own funds. The non-beneficiary farmers serve as a control group for the beneficiaries.

2.10 Type of Lending (Nature of Lending) :

It refers to either of the two types viz., general lending or schematic lending. General lending refers to the long-term lending from banks' own funds and other sources, while schematic lending refers to scheme-based lending involving NABARD refinance component.

2.11 Automatic Refinance Disbursements :

The bank branch can obtain refinance for certain schemes without the prior approval of the National Bank, provided the scheme has an already proved eligibility of its potential.

2.12 Full Refinance Support System (FRSS) :

Where there is a close matching of the service area plan and the potential linked credit plan the full extent of what the bank has projected can be claimed as refinance.

2.13 Self-Help Groups :

The informal voluntary groups of the rural poor who help to inculcate habits of thrift and saving and which used these resources

for meeting the credit needs of its members are referred to as self-help groups.

4.1 Credit For Seasonal Agricultural Operations :

It is the refinance provided by the National Bank for agricultural crop loans or they are agricultural loans for short period.

4.2 Ground Level Credit :

It refers to the total amount of credit disbursed by all the credit institutions at the district level for the concerned schemes. It gives a general picture of the trend of credit disbursals.

4.3 Refinance Disbursed :

It refers to the amount of credit disbursed by the National Bank by way of schematic refinance for the various schemes at the district level. It gives a micro picture of the trend of the flow of Rural Schematic Refinance.

5.1 Marginal Farmer :

A cultivator with a landholding of 2.5 acres or below is a marginal farmer.

5.2 Small Farmer :

A person with a landholding between 2.5 acres and 5 acres is a small farmer.

5.3 Medium Farmer :

A medium farmer is a farmer who has land below 10 acres. They have a landholding ranging normally between 5.1 acres to 9.9 acres.

5.4 Large Farmer :

A cultivator with a landholding of 10 acres or above is a large farmer. Based on the quality definition of land or on its intensity of irrigation a suitable conversion of the acreage under each category of farmer may be adopted by the state government.

5.5 Individual Planting :

It refers to a situation where a single individual or his family members undertake a rubber plantation project. Here, the ownership of the land under plantation is in a single or few hands.

5.6 Group Planting :

When a rubber plantation is undertaken on a partnership basis, it involves a group of members or families in its functioning. A group plantation normally refers to large estates or large sized rubber plantation units.

5.7 Total Cost Incurred :

It refers to the total amount of cost incurred on rubber plantation during the first seven years of the plantation i.e. the development cost.

5.8 Total Cost Approved :

It refers to the cost approved by NABARD in order to meet the expenses of development cost in rubber plantation.

5.9 Fully Repaid :

It refers to those farmers who repaid the demanded amount completely.

5.10 Partly Repaid :

The farmers who repaid only a part of the loan demanded constitute the partly repaid.

5.11 Unpaid :

The loanees who did not repay any part of the amount demanded form the 'unpaid' category.

5.12 Opportunity Cost :

It is the cost for the next best alternative. In this study, it refers to the alternative work, income and employment of the beneficiary.

5.13 Material Cost :

The cost on the materials purchased for development of rubber plantation at different stages is referred to as material cost. The cost of planting materials, manure and fertilizers, spray chemicals and stores, material for plant protection like china clay, and rubber coat packages, rainguarding materials and materials for tapping like dish, knife etc constitute the material cost.

5.14 Annual Overhead Cost :

The annual overheads include repairs and maintenance of farm capital (like well, pumpset and farm machinery), electricity charges, water charges, land revenue taxes, interest paid on loans and other expenses if any which are not included in the cost of cultivation.

5.15 Actual Cost of Labour :

It refers to the sum total of the cost incurred on the investment by way of hired labour.

5.16 Imputed Cost of Labour :

The own labour component in order to be expressed in money wages necessitates imputed costs. Thus the 'own labour' component expressed in money terms is referred to as imputed cost of labour.

5.17 Total Cost of Labour :

It includes both actual cost of labour and imputed cost of labour.

5.18 Increment through Productivity :

By this is meant change in income of the beneficiaries as a result of increment in the yield and productivity of the cultivated crops compared to the pre-loan situation.

5.19 Increment through Cropping Intensity :

The increment in income of the beneficiary as a result of the efficient use of per unit of land (i.e.increasing the number of times a crop is raised) by the farmers compared to the Pre-loan period is referred to as increment through cropping intensity.

5.20 Increment through Cropping Pattern :

Increment in income as a result of change in cropping pattern refers to the additional income generated in the post-loan period as a result of changes in the allocation of the area under different crops. The allocation of area under different crops of a borrower farmer is expected to be governed by profit maximisation motive, and hence, more and more acreage are expected to be allocated for superior and/or commercial crops.

5.21 Increment through Farm Practices :

The increase in income of the farmer-borrower as a result of increment through farm practices means the difference in income levels between the pre- and post-loan periods as a result of the use of improved seeds, chemical fertilizers, pesticides and other scientific methods of cultivation.

5.22 Incremental Livestock Asset :

It is the increase in livestock assets (i.e cows, buffaloes, bullocks, goats, sheep, hens, ducks etc) between the pre- and post-loan periods as a result of an additional livestock asset generation in the post-loan period.

5.23 Incremental Physical Asset :

The increase in physical assets (i.e. land implements, buildings, household utensils and other durables) in the post-loan period compared to the pre-loan period is referred to as incremental physical asset.

Grass-root Level Exercise and General Macro Exercise :

Questions were asked to the beneficiary in order to grasp their opinion on how their credit requirements were assessed. It is in this context that we refer to grass-root level exercise and macro exercise.

5.24 Grass-root Level Exercise :

It refers to a micro assessment of the credit requirements of the individual beneficiaries or various sections of the population.

5.25 General Macro Exercise :

It refers to a uniform and a general macro assessment of the credit requirements of individuals and various sections of the population.

6.1 Purpose of Loan :

The various purposes for which loans are disbursed for minor irrigation investments like new well, pumpset and new well with pumpset are here referred to as purpose of loan.

7.1 Financial Viability of Loan :

The viability of loan is determined on the basis of private costs and returns accruing to the borrowers and their ability to repay the loan as stipulated by the provision of the loan agreement.

7.2 Benefit-Cost Ratio :

The benefits and costs are discounted using discounting and compounding tables at 15 per cent discount factor.

7.3 Pooled Benefit-Cost Ratio for Rubber Plantation Development Scheme :

It refers to the benefit-cost ratio for the Rubber Plantation Development Scheme as a whole i.e. for all the three districts together.

7.4 Pooled Benefit-Cost Ratio For Minor Irrigation :

It gives a wholistic view of the benefit-cost ratio for the Minor Irrigation Scheme for all the purposes under it (new well, pumpset and new well with pumpset) and for all the three districts together.

7.5 Income Generated from the Project :

The net income derived from the project of investment alone is referred to as the income generated from the project.

7.6 Pooled Rubber Plantation Development Scheme (RPDS) Model :

The pooled RPDS model refers to the multiple regression results for all the three districts together for the RPDS.

7.7 Pooled Minor Irrigation Model :

It refers to the regression results on loan recovery for the Minor Irrigation Scheme for all the three districts together.

7.8 Pooled Scheme-wise and District-wise Model :

It refers to the regression results on loan recovery for both the schemes together (RPDS and MI) in the three districts separately and also together.

LIST OF ABBREVIATIONS

ACL	Actual Cost of Labour
ACRC	Agricultural Credit Review Committee
AOC	Annual Overhead Cost
APRACA	Asian and Pacific Regional Agricultural Credit Association
ARDC	Agricultural Refinance and Development Corporation
CADA	Command Area Development Authority
CBs	Commercial Banks
CCBs	Central Co-operative Banks
CRAFICARD	Committee to Review Arrangements for Institutional Credit for Agriculture and Rural Development
CV	Coefficient of Variation
DCBs	District Co-operative Banks
DCCBs	District Central Co-operative Banks
EKM	Ernakulam
FSS	Farmers Service Societies
GIC	General Insurance Corporation
GLC	Ground Level Credit
ICI	Increment through Cropping Intensity
ICL	Imputed Cost of Labour
ICP	Increment through Cropping Pattern
IDBI	Industrial Development Bank of India
IFAD	International Fund for Agricultural Development
IFP	Increment through Farm Practices
IP	Increment through Productivity
IRDP	Integrated Rural Development Programme
KSCB	Kerala State Co-operative Bank
LAMPS	Large-Sized Multi Purpose Societies
LC	Labour Cost
LF	Large Farmer
MC	Material Cost
MEF	Medium Farmer
MF	Marginal Farmer
MI	Minor Irrigation
NABARD	National Bank for Agriculture and Rural Development
NFS	Non - Farm Sector
NII	Net Incremental Income
NMGB	North Malabar Gramin Bank
NNP	Net National Product
NRC	National Rural Credit
NRI	Non - Resident Indian
NW	New well
NW + PS	New well with Pumpset

OPEC	Organisation of Petroleum Exporting Countries
PACs	Primary Agricultural Co-operative Societies
PH	Plantation/ Horticulture
PKD/PGT	Palakkad / Palghat
PLDBs	Primary Land Development Banks
PTA	Pathanamthitta
RBI	Reserve Bank of India
RRBs	Regional Rural Banks
RSR	Rural Schematic Refinance
SAO	Seasonal Agricultural Operations
SBI	State Bank of India
SCBs	State Co-operative Banks
SDC	Swiss Development Corporation
SDP	State Domestic Product
SHGs	Self-Help Groups
SIDBI	Small Industries Development Bank of India
SLDBs	State Land Development Bank of India
SMGB	South Malabar Gramin Bank
TCA	Total Cost Approved
TCI	Total Cost Incurred
TCL	Total Cost of Labour
VVV	Vikas Volunteer Vahini

CHAPTER 1



INTRODUCTION

CHAPTER 1

INTRODUCTION

Development Economics has long since recognised the importance of financial institutions in the process of economic growth. The governments of less developed countries have focussed their attention on developing a rural credit delivery system for serving as a catalyst of the process of rural development. These countries have faced a major problem of adapting the existing financial structure and developing new financial institutions suited to the requirements of the development process. Different countries developed and experimented with varying forms of financial institutions and state intervention. Proper documentation of these experiments will go a long way in saving time and money spent on illconceived credit programmes.¹

The institutional credit system in India suffers from certain basic shortcomings, namely, emphasis on creditworthiness of borrowers instead of creditworthiness of the purpose for which the loans are required, ad hoc or scattered lending to individuals without any project or area approach for lending which does not provide the necessary backward and forward linkages and the lack of the much needed bias in favour of small farmers and other weaker groups. It is felt that there is the need for development orientation to banking in the rural sector. A large gap exists in the rural credit scene between demand for and supply of credit, both in terms of functional needs and in terms of adequate geographical coverage in different regions of the country. The socio-economic characteristics of one group differ from those of another group. The credit

1. Elavia, B.H., Innovations in Rural Refinancing - The Indian Experience, Gujarat, Published by the Author, 1988, P.1.

institutions are not tuned to meet the requirements of specific areas and specific target groups. The pattern of indebtedness shows that consumption loans form a large part of the debt of the rural poor. Thus it is seen that a development orientation to banking is uniformly absent.

In India, considerable efforts are made for development of the financial system. Realising the immense need for increasing the flow of investment credit for agricultural development a Rural Schematic Refinance System (R S R) was instituted in 1963. Thereafter the policies, procedures and programmes of the system have undergone several improvements and updating. It has matured into a well-designed system of refinancing to which the participating institutions have responded very well. Several financial innovations introduced in the system have increased the efficacy of rural finance, over time, in the countryside.²

Since the second half of the fifties, an urgent need was felt to achieve self sufficiency in foodgrains production. For this, it was pertinent to increase institutional investment in agriculture. In response to the felt need, the Agricultural Refinance Corporation (A R C) was established by an Act of the Parliament in July 1963. Its main function was to provide refinance facilities to the State Land Development Banks (SLDBs) for redemption of old debts of the farmers. In 1975, the Corporation was re-styled as the Agricultural Refinance and Development Corporation (ARDC), with a view to emphasise the developmental and promotional role being played by the Corporation. Besides this, there was a system for refinancing the crop loans through the Agricultural Credit Department of the Reserve

2. Elavia, B.H., Op. cit.

Bank of India (RBI). Ultimately, with a view to having an apex institution at the national level, many recommendations emerged.³

The Genesis of the National Bank For Agriculture And Rural Development (NABARD)

The committees and working groups⁴ in the field of agricultural credit and development felt that the institutional structure had to widen its coverage and deepen its involvement so as to be able to meet the graduated agricultural credit requirements.

As regards the Agricultural Refinance Development Corporation (ARDC), the major deficiency was its inability to ensure that the borrowers got the necessary supporting short term credit. Secondly, as already mentioned, its support to the activities not based on land had not yet reached a significant level.

As regards the RBI, it had to combine diverse functions and duties including rural credit. In that context, it was not possible for the RBI to set aside adequate time for giving attention, direction and focus to the details of the complex credit problems of Integrated Rural Development. However, the first proposal to hive off agricultural credit from the RBI and to create a national level agricultural bank was rejected by the All India Rural Credit Review Committee (1969) on the following grounds:

3. Ibid, PP.1-2

4. All India Rural Credit Review Committee 1969.
The Banking Commission 1972.
The National Commission on Agriculture 1976.
The Committee to Review the Arrangements for Institutional Credit for Agriculture and Rural Development 1979.

a. With the experience and expertise which the RBI had built up over the years, it was convinced that the RBI should continue to discharge the functions of agricultural credit.

b. The committee felt that the new institution would only add to the cost of credit and the red tape associated with its procedure without adding to the resources or the efficiency of the system. The committee, however, felt during the mid-seventies, that the time was appropriate for a major 'structural change'. Since the report of the ACRC, certain developments had taken place which resulted in enhancing the need for increase in credit flow to the rural sector. Multi-agency approach to rural credit delivery had been adopted and pursued vigorously. It was felt that if the Agricultural Credit Board (ACB) were a statutory body or similar to a Board of Directors it would have played a more intimate and significant role in the evolution of rural credit policies. These facts highlighted afresh the desirability and feasibility of establishing a national level bank for agriculture and rural development.

The Banking Commission (1972) favoured the combination of the ARDC and the Agricultural Finance Corporation (AFC) to form a new institution within the RBI complex but stressed that all short-term credit should be under the control of the RBI. The National Commission on Agriculture (1976) exhorted the RBI to take steps to integrate the total structure for financing agriculture and rural development from the grass-root level to an apex organisation. As regards the RBI's need to control short-term credit, the critics argued that the short-term credit for agriculture had at no point of time, been inhibited by the requirements of monetary policy, as the RBI had always accorded preferential treatment to rural credit.

At the insistence of the Government of India, the RBI appointed on March 30, 1979, a committee under the

chairmanship of Shri B.Sivaraman to review the arrangements for institutional credit for agriculture and rural development (CRAFICARD).

The main goal of the Committee was to ensure that different constituents of the rural credit system developed harmoniously and functioned in a co-ordinated and complementary manner, avoiding unnecessary duplication of efforts and, above all, promoting all-round higher production in the rural areas.

The report of the Committee consisted of two parts. The first part pertains to the examination of credit delivery system at the field level with a view to find out the position regarding the tie-up between credit and plan programmes and what further improvements were necessary. The second part relates to the study of national level institutions.

The Interim Report of the CRAFTICARD (November 1979) which suggested the setting up of a national level institution was influenced by two considerations:(a)the effective implementation of the concept of integrated rural development required a much greater measure of direction and guidance and (b) a greater degree of co-ordination at the highest level was needed.

The search for a statutory body for policy making for agricultural credit, together with the socio-economic factors prevailing then, encouraged the setting up of a national level institution called the 'National Bank for Agriculture and Rural Development' (NABARD). Thus the NABARD was set up on 12th July 1982 by an Act of Parliament (Act No 61 of 1981). It was established by merging the Agricultural Credit Department and the Rural Planning and Credit Cell of the RBI and the entire undertaking of the Agricultural Refinance and Development Corporation (ARDC).

The Functions and the Objectives of NABARD

The Committee (CRAFICARD) views the integration inherent in rural development in four dimensions: the first is the concept of 'overall development for all' with focus on specified target groups. The second is the elaboration of the first-credit being integrated with technical services, so that productive deployment of credit leads to its prompt repayment out of the additional income generated. The third dimension implies the integration of economic activities inherent in rural development to ensure balanced growth. The fourth dimension is one of integrating the credit disbursing activities under multi-agency, so as to avoid duplication of efforts in extending credit or technical expertise. The functions of the National Bank as per the committee report is as follows:

1. Developmental policy, planning and operational matters relating to the credit for agriculture and allied activities.
2. Training, research and consultancy relating to credit for agriculture and rural development.
3. Refinance [Short-term(ST), Medium-Term(MT) and Long -Term(LT)] to co-operatives and Regional Rural Banks including co-operative marketing and distribution.
4. Refinance to commercial banks against term lending (MT and LT) and short-term accommodation for specific purposes.
5. Direct lending singly or through consortium arrangements.
6. Co-ordination and monitoring of all agricultural and rural lending activities.

7. Inspection of co-operative banks and regional rural banks.
8. Advice and guidance to state governments, federation of co-operatives etc.

There are also related items of work such as collection of annual statistics relating to co-operative movement in India. NABARD cannot resort to direct lending as a general rule. But if NABARD feels that the institutional credit arrangements in a particular area or of a particular purpose are not developing as fast as it should, then it can undertake direct lending. According to the CRAFTCARD report, NABARD will support the co-operatives as most of the lending activities relating to the rural sector in general and the rural poor in particular are routed through the co-operative institutions.

NABARD has primarily three functions:

- a. Credit dispensation (Refinancing)
- b. Developmental Function
- c. Regulatory function (Inspection)
 - a. NABARD provides different types of refinance to the eligible institutions. Short-term credit is provided for purposes like seasonal agricultural operations, marketing and distribution of inputs, small scale industries etc. Medium-term credit is provided for investments in agriculture requiring a period between 18 months and seven years. Long-term credit is available upto a maximum of 25 years. It is provided for purposes like Plantation/Horticulture, Minor Irrigation, Land Development, Dairy, Poultry etc.

b. The developmental functions of NABARD are :- Co-ordinating operations of rural credit institutions, institution building to improve the credit delivery system, developing expertise to deal with agriculture and rural problems and assisting the Government, the Reserve Bank of India and other institutions in rural development efforts.

c. The regulatory function of the National Bank empowers it to undertake the inspection of Regional Rural Banks, Co-operative Banks and other agency institutions.

PERFORMANCE OF THE NATIONAL BANK IN KERALA

The total disbursements of NABARD in India upto March 1992 amounted to Rs 16364 crores. About 3.8 per cent of the total disbursements i.e. Rs 625.96 crores were disbursed to the state of Kerala. A total of 577 schemes were allotted. Of the total disbursements in Kerala, first priority was given to Plantation and Horticulture which amounted to Rs 197.39 crores. The second priority was for Minor Irrigation which accounted for Rs 145.45 crores. The third was for the Integrated Rural Development Programme, which amounted to Rs 129.55 crores and the fourth for Dairy Development which amounted to Rs 25.49 crores.⁵

The Thesis

NABARD has completed 14 years of operation. In the light of its experiences and achievements, the performance evaluation of the National Bank need to be looked into. This could provide certain criteria for its strength and weakness which may help in consolidating the institution for better utilisation of its potentialities.

5. NABARD, Annual Report 1991-'92, Bombay, Department of Economic Analysis and Research, 1992, PP.196 and 210.

It is also noteworthy that no evaluative study on the National Bank has been conducted in Kerala.

The Major objective of this study is to evaluate the role of NABARD in catering to the long-term agricultural credit requirements of Kerala for 1982 to 1992. This is done by analysing the quantum and quality of NABARD's schematic refinance. The qualitative indices like (1) the efficiency of loan recovery, (2) the impact or financial viability of NABARD refinanced schemes, (3) the credit gap, (4) the commitment-disbursement gap, and (5) the imbalances in the NABARD refinance form the core of the study. Hypotheses were formulated in order to study and analyse these qualitative indices.

The study is presented in eight chapters. The introductory chapter, provides an introduction to the National Bank. It highlights the genesis of the National Bank, its objectives and functions. The second chapter presents the broad research design of the study. It includes the research problem, the objectives of the study, hypotheses, data base and methodology, the tools for analysis of data, the limitations of the study and the structure of the thesis. Chapter three attempts a brief review of literature on the subject. This chapter is divided into three major sections. Section I and II are a review of theoretical issues and empirical issues respectively and section III explains the research gaps identified. Secondary data on the growth trend and the distribution pattern of Rural Schematic Refinance is given in the fourth chapter. The performance evaluation of the Rubber Plantation Development Scheme in the selected districts of Pathanamthitta, Ernakulam and Palakkad are analysed in the Chapter Five. The sixth chapter is on the performance evaluation of the Minor Irrigation Scheme. The analytical framework on the lending efficiency, the financial viability and the factors affecting loan recovery of the two schemes

are explained in chapter seven. The summary of findings, conclusions and recommendations form the eighth chapter. The survey schedules and the tables supporting the analytical work on financial viability are appended at the end of the thesis.

CHAPTER 2



THE RESEARCH
DESIGN



CHAPTER 2

THE RESEARCH DESIGN

SIGNIFICANCE OF THE STUDY

The contribution of agriculture to economic development depends to a great extent on its productivity. The role of credit in increasing the agricultural productivity has, thus, to be given due importance. In the past couple of decades rural credit programmes have been organised in almost all the developing countries. The introduction of new technology and multiple cropping as well as the implementation of land reforms increased the number of small and medium farmers who require credit for all purposes. This increased the demand for agricultural credit. Thus substantial amount of money is being utilised for agricultural credit programmes in all the developing countries, where capital is scarce. Rational allocation of these funds requires an analysis of their use.

It is important to study the economies of credit use. The reduction of inequalities in the distribution of income and wealth has been adopted as one of the important objectives of the economic policy in developing countries. Agricultural credit policies could be effectively used towards this end, if they are properly formulated. On the other hand, it is likely that agricultural credit programmes may aggravate the existing inequalities if they are not formulated and administered well. The effectiveness of credit policies in this respect, therefore, depends very heavily on a clear understanding of the economic issues involved. A study of credit use may also indicate the effectiveness of agricultural credit as a policy instrument to achieve agricultural growth.

The issues that are experienced today in the rural credit arena are second generation problems. The important issues are the problem

of loan recovery, the shortage of credit supply vs the demand for it, the financial viability of projects and the imbalances in credit supply. The National Bank being an apex institution in the field of agriculture and rural development, the functions and potentials of the Bank need to be looked into.

STATEMENT OF THE RESEARCH PROBLEM

In the early stages, institutional credit was viewed as a weapon to protect farmers from the clutches of money lenders. But the initiation and expansion of institutional credit in rural areas resulted in many problems relating to it. Recovery of loans is often cited as a major problem with reference to the rural credit system. Poor recovery performance by the banking sector continues to be one of the major problems in its functional operations and this jeopardises the prospect of further lending to needy sectors. Data show that loan overdues have been on an increase from 1988 to 1990. But the situation has shown slight improvement during 1990-'91. Table 2.1 explains the trend with reference to disbursement and recovery of credit in agriculture, allied sectors and small scale industry. The recovery for the total priority sector is also explained.

Poor recovery of the bank also reflects in replenishing its funds from refinancing agencies like NABARD, since the credit institutions are not eligible to draw refinance unrestrictedly. In the light of the above situation, a study relating to loan recovery with reference to NABARD refinance is worth undertaking. Though poor recovery does not directly affect the operations of NABARD in the short-run, it would have its impact on NABARD's operations in the long-run. It is worth finding out whether the Eligibility Criteria of NABARD refinance have made the agent banks more vigilant to recover their debts or whether the problem of recovery of loans follows a general trend.

TABLE :2.1.

SECTOR WISE RECOVERY POSITION IN KERALA (1988 - '91)

SECTOR	JUNE 1988			JUNE 1989			JUNE 1990			JUNE 1991		
	DEMAND	RECOVERY	RECOVERY %	DEMAND	RECOVERY	RECOVERY %	DEMAND	RECOVERY	RECOVERY %	DEMAND	RECOVERY	RECOVERY %
AGRICULTURE & ALLIED ACTIVITIES	45,386.00	32,175.00	70.89	528.00	360.20	68.22	526.00	286.06	54.38	612.50	364.06	59.44
SMALL SCALE INDUSTRIES	16,592.00	7,153.00	43.11	205.13	85.70	41.78	218.66	83.08	38.00	270.33	108.79	40.24
TOTAL PRIORITY SECTOR	89,619.00	54,659.00	60.99	1,095.65	654.79	59.76	1,104.77	568.22	51.43	1,303.53	699.04	53.63

SOURCE : KERALA - A BANKING PROFILE , CANARA BANK , S.L.B.C. CONVENORS , SECTOR WISE RECOVERY POSITION - KERALA STATE p 49.

TABLE :2.2.

SCHEME WISE GAP STATEMENT OF NABARD REFINANCE (1991 - '92)

SCHEME	NATIONAL BANK COMMITMENT	DISBURSEMENT	RS. IN LAKHS	
			GAP	GAP %
MINOR IRRIGATION	2,339.00	1,961.00	378.00	16.16
LAND DEVELOPMENT	423.00	237.00	186.00	43.97
PLANTATION / HORTICULTURE	3,769.00	2,250.00	1,519.00	40.30
POULTRY/SHEEP/PIGGERY	276.00	104.00	172.00	62.32
FISHERIES	269.00	126.00	143.00	53.16
DAIRY DEVELOPMENT	603.00	505.00	98.00	16.25

SOURCE : NABARD ANNUAL REPORT 1991 - '92 p 210.,

The unique feature of Kerala is the higher incidence of short-term loans and the poor offtake of asset-generating term loans. In Kerala crop loans were in the order of Rs.1,400/- per hectare on an average in the year 1993, and term loan of Rs.500/- per hectare on an average; while in the states like Tamil Nadu and Punjab, it was the other way around.¹ It is a recognised fact that asset generating term loans are a pre-requisite for the development of the economy in the long run. If the term loans are not encouraged even the short term production loans will be ineffective overtime. In this context the refinance assistance for schematic lending is an important area, as schematic refinance involves schemes of a medium term and long term nature. During the year 1990-'91, NABARD disbursed Rs.8,948 lakhs in Kerala for medium term and long term purposes, of which Rs.8,158 lakhs was by way of schematic refinance. Schematic refinance occupies 90 per cent of NABARD's lending in the arena of medium-term and long-term disbursements. The total financial assistance for schematic lending given by all agency institutions during 1990-'91 was Rs.10,973 lakhs, of which NABARD disbursed Rs.8,158 lakhs, which amounted to 75 per cent². Stress need be given to the quantum and quality of long-term lending. It is relevant to study the end use of credit and the viability of loans.

The credit supply in Kerala was far ahead of those of other states in the country. The ACRC pointed out that the per hectare advances and outstandings by all the credit agencies were the highest

1. Nair, K.P.D, 'Farm Panel May adopt Area Approach',The Indian Express, November 17, 1993, P.13.

2. NABARD, Annual Report 1990-'91, Bombay, Department of Economic Analysis and Research, 1991, P.166.

in Kerala at Rs.3,864/- per hectare. There was a more than average credit supply in Kerala but no development corresponding to it. That must be due to the fact that either viable projects were ignored or due to lack of proper investment channels. Thus the need for a special emphasis on the qualitative aspect of credit in Kerala.

The state agricultural sector was in for a serious setback, owing to the alarming diversion of credit by Primary Agricultural Credit Society (PACS) to the non-farm sector. Even the credit available to agriculture had been, by and large, concentrated on crops like banana which account for low acreage under cultivation, that too at the cost of paddy and coconut. In percentage terms the share of farm loans had come down from 66.48 in 1979-'80 to 42.3 in 1989-'90. The report of the Planning Board's study by its agricultural Division worries about the shift in rural co-operative credit and states that this trend in the co-operative sector was most likely to dash the hope of resuscitating the farm sector. The credit shift to the non-farm sector had been pronounced together with the fact that the credit made available to the agricultural sector itself was irrational. The Planning Board study has found that there is no connection between the extent of coverage under each crop and the quantum of production credit disbursed to them. The reason for such skewed behaviour could be the attractive and enhanced rate of finance available for the crop.³

Dr.Gulati⁴ points out that Kerala's low Credit Deposit Ratio is a clear indication of the channelisation of money raised in the state and other states to extend credit to industrialists there. The banks

3. Menon Girish, "Alarming Credit Shift to Non-Farm Sector by Co-operatives", The Indian Express, January 18, 1993.

4. Gulati I.S. "States Credit Deposit Ratio below 50 per cent' - Channelisation of Money", The Hindu, January 22, 1993.

attribute it to the absence of large scale industries and viable projects capable of absorbing the credit in Kerala, but several industrial units, especially in the small scale sector, are falling sick for want of adequate working capital. Banking circles admit that funds mobilised in the state are being channelised to other parts of the country.

In minor irrigation only 15 per cent of the ground water resources of the state have been tapped. According to calculations there is scope to dig 12,000 wells which would provide adequate irrigation facilities to coconut and rubber cultivation. But the problem in adopting area approach in land development is the small holdings in Kerala.⁵ Major and medium irrigation works entail large investment of public funds and involve long gestation periods. Given the wide differences in geographical conditions, development of major and medium irrigation sources throughout the country is almost impossible. In contrast, minor irrigation works can be developed in all areas where ground water potential is available or where surface flows can be lifted. They also have the advantage that they are quick-maturing as well as labour-intensive.⁶ As a National Bank, NABARD could look into the reasons why there is less demand for term loans and should be able to encourage the assetgenerating sectors like minor irrigation, plantation /horticulture, land development, agro-processing and traditional sectors. In the context of the problems faced by the Kerala economy it was not possible for NABARD to streamline its credit in tune with the long-

5. Nair K.P.D. Op.Cit.

6. NABARD, Annual Report 1986-'87, Bombay, Department of Economic Analysis And Research, October 1987, P.26.

run needs, but it has merely been lending according to the demand for credit from the member banks. As the apex bank for rural development, NABARD should be able to take new initiative. In the light of these problems a study relating to the impact and financial viability of NABARD financed schemes like Plantation/Horticulture and Minor Irrigation is worth undertaking.

Data show that in Kerala there is a gap between the demand for and supply of credit for agriculture and allied activities. For example, the demand for credit in 1990-'91 was Rs.63,671 lakhs. But the supply was limited to Rs.48,887 lakhs. Similarly in 1991-'92 the demand for credit was Rs.68,596 lakhs and the corresponding supply was only Rs.62,299 lakhs. This shows that there was a credit gap of Rs.14,784 lakhs in 1990-'91 and Rs.6,297 lakhs in 1991-'92.⁷ This macro picture of the credit gap is also seen at the micro level. The Approved Unit Cost for investments under NABARD refinance are insufficient compared to the actual demand for credit. The extent and magnitude of the credit gap between regions and schemes need to be looked into. Thus there is the need to calculate the gap in money requirement of the beneficiary at the grass- root level.

In the light of the data regarding the credit gap mentioned above it is paradoxical to see a wide gap between the commitment and disbursement/utilisation of NABARD refinance. For example during 1991-'92, NABARD sanctioned Rs.11,097 lakhs, of which only Rs.8,456 lakhs was disbursed. Table 2.2 gives the utilisation gap for the various schemes sanctioned in Kerala during 1991-'92. The utilisation gap is the highest in the plantation and horticulture sectors. During 1991-'92 it was 40.3 per cent.⁸

7. Canara Bank, Kerala A Banking Profile, Thiruvananthapuram, State Level Bankers Committee, 1992, P.51.

8. NABARD, Annual Report, 1991-'92, Bombay, Department of Economic Analysis and Research, 1992 P.210.

Studies based on the correlation between the index of agricultural development and credit supply showed that institutional credit followed the contours of development.⁹ There has also been regional imbalances in the refinance disbursed by NABARD. With the increasing amount of refinance for schematic lending the equitable disbursement of the amount among the different classes of farmers and different regions of the country is becoming a matter of concern for social scientists and planners.¹⁰ The extent and the nature of imbalance in refinance disbursed between districts is to be looked into and correction should be effected. Some amount of regional imbalances are part of development. But the magnitude of its skewness must be analysed. For investment finance also NABARD's objective has been that at least 60 per cent of its refinance assistance should go to the small and marginal farmers.¹¹ The various aspects of imbalance and how far NABARD has reached its goals of attaining regional balance should be looked into.

After 14 years of NABARD's existence an appraisal of its multifarious activities is essential to assess the points of strength and weakness with a view to help in consolidating the institution for better utilisation of its potentialities. No evaluative study on the National Bank has been conducted in Kerala.

9. Desai D.K., "Institutional Credit Requirements for Agricultural Production - 2000 A.D.", Indian Journal of Agricultural Economics, Vol.43, No.3, July-September 1988, P.344.

10. Sangwan, S.S. - "Agricultural Investment and Regional Imbalances, A Study of Refinance Disbursed by NABARD", Indian Journal of Agricultural Economics, Vol.41, No.4, October-December, 1986, P.561.

11. NABARD Induction Course Reading Material, 1987, Lucknow, NABARD Staff College, 1987, P.30.

OBJECTIVES OF THE STUDY

Main Objective

The major objective of the study is to evaluate the role of NABARD in catering to the long-term agricultural credit requirements of Kerala from 1982 to 1992.

Subsidiary Objectives

- (i) To study the contribution of NABARD to the quantum of long term agricultural credit.
- (ii) To study the quality of NABARD's refinance using selective criteria.

The Selective Criteria are:

- (i) The efficiency of loan recovery.
- (ii) The impact and financial viability of NABARD -financed schemes.
- (iii) The credit gap, ie the gap between the unit cost approved by NABARD and the actual cost incurred on the investment.
- (iv) The gap between the commitment and disbursement of NABARD refinance.
- (v) The imbalances in NABARD refinance.

HYPOTHESES

- (i) The Eligibility Criteria for NABARD refinance has positive effect on loan recovery.
- (ii) The financial viability of the Rubber Plantation Development Scheme is higher than that of Minor Irrigation.
- (iii) The Unit cost approved by the National Bank is not sufficient when compared to the actual cost incurred.
- (iv) a. There is an inverse relationship between development and the commitment-disbursement gap.

(iv) b.The Commitment-Disbursement gap is higher with respect to Plantation Scheme when compared to Minor Irrigation Scheme.

(v)The NABARD assessment of credit requirement is not scheme specific but is only a general macro exercise. This results in imbalances in schematic refinance.

METHODOLOGY AND DATA BASE

The study is based on both primary and secondary data. Primary data were collected using pre-drafted and pre-tested interview schedules. Secondary data were collected from NABARD Regional Office, Thiruvananthapuram, the publications and annual reports of the National Bank, the report of the Committee to Review the Arrangements for Institutional Credit for Agriculture and Rural Development (CRAFICARD), the report of the various Agricultural Credit Review Committees, the report of the Banking Commission, RBI Regional Office, the Directorate of Agriculture, the Bureau of Economics and Statistics and the Directorate of Rural Development at Thiruvananthapuram.

SELECTION OF THE STUDY DISTRICTS:

For primary data collection three districts were selected from Kerala based on the quantum of NABARD refinance. The district with high refinance - Palakkad, the district with average refinance - Ernakulam and the district availing the least amount of refinance - Pathanamthitta are the three districts.

The Criteria for Selection of Districts

The 14 districts in Kerala state were broadly classified under three categories:-

- a. Districts availing less refinance (Rs.1000-2000 lakhs).
- b. Districts availing average amount of refinance (Rs.2000-3000 lakhs)
- c. Districts availing high amount of refinance (Rs.3000-4000 lakhs)

The cumulative total of refinance availed from 1989-'90 to 1992-'93 was taken as the index of disbursements for the districts as district-wise data on disbursements were available only from 1989 onwards. Table 2.3 gives the cumulative total of refinance disbursed in the districts from 1989-'90 to 1992-'93.

Table 2.3
District-wise Disbursement of Refinance

Name of District	Cumulative total of disbursement (Rs. Lakhs)
1989-'93	
Thiruvananthapuram	2510.56
Kollam	2299.85
Pathanamthitta	1564.67
Alappuzha	1772.06
Kottayam	2580.14
Idukki	2198.70
Ernakulam	2357.73
Thrissur	2971.49
Palakkad	3120.30
Malappuram	2820.19
Kozhikode	2547.7
Wyanad	1143.21
Kannur	3493.88
Kasargod	3583.28

Source: NABARD Regional Office, Thiruvananthapuram.

The districts have been classified into three classes as follows:

Table 2.4

Classification of Districts Based on Refinance
(Rs. lakhs)

<i>Refinance disbursed (1989-90 to 1992-93)</i>	<i>Districts</i>
1000-2000	Wyanad, Alappuzha and Pathanamthitta.
2000-3000	Idukki, Kollam, Ernakulam, Thiruvananthapuram, Kozhikode, Kottayam, Malappuram, Thrissur.
3000-4000	Palakkad, Kannur, Kasargod.

SOURCE : NABARD Regional Office , Thiruvananthapuram

Using the random sampling technique, one district was selected from each class. Pathanamthitta district was selected from the lower bracket, Ernakulam from the average bracket and Palakkad from the higher bracket.

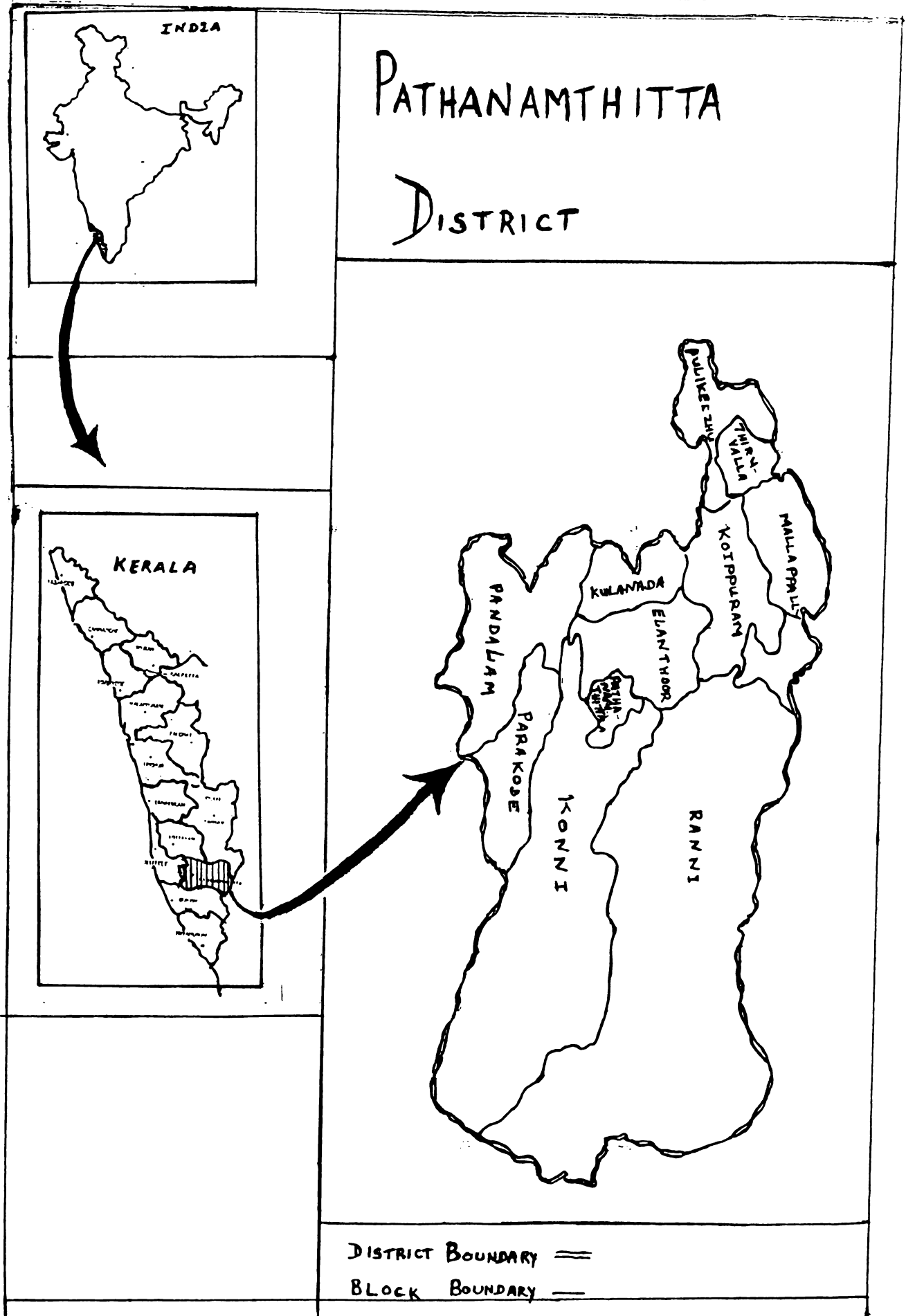
BACKGROUND OF THE STUDY DISTRICTS

PATHANAMTHITTA

The total geographical area of the district is 2,68,750 hectares, of which 1,39,082 are forests. The district consists of three natural divisions viz low land, mid land and high land. The total population of the district as per 1991 census is 11,86,628. The density of population of the district is 449 per sq.km. The district was announced as a complete literate district in 1991 by the Government of Kerala. Twentyone commercial banks with a total of 163 branches are functioning in the district. The district has a good network of co-operative banks, the total number being 147. The credit deposit ratio is less than 13 per cent. Agriculture is the main occupation of the people and about 80 per cent of them depend on it directly or indirectly.¹²

12. Canara Bank, Op.cit., P.17

MAP OF PATHANAMTHITTA DISTRICT



The boundaries of the district are the Western Ghats in the east, Alleppy district in the west, Kottayam and Idukki districts in the north and Quilon district in the south. It lies between 9° and 9.5° north latitude and 76.5° and 77.5° east longitude. Map 2.1 explains the geographical position of Pathanamthitta district.

ERNAKULAM

This district with a total area of 2,407 sq.km. ranks seventh in size among the districts of Kerala and is the first district in the country to have achieved 100 per cent literacy. The total population of the district is 27.97 lakhs as per 1991 census. There are a number of commercial banks, foreign banks and co-operative banks in the district. The Kerala Financial Corporation, Office of the District Development Manager, NABARD, State Office of the Industrial Development Bank of India (IDBI) and Small Industries Development Bank of India (SIDBI), function in this district. There are seven taluks and a total of 120 villages in the district. As on March 1991 there are 397 bank branches of 39 commercial banks, three branches of two foreign banks, a District Co-operative Bank with 30 branches and more than 143 co-operative societies. The Ernakulam District Co-operative Agricultural and Rural Development Bank has three main Primary Agricultural and Rural Development Banks with many branches and sub offices. The district has been in the forefront in achieving the various targets under the District Credit Plans and government sponsored schemes like the Integrated Rural Development Programme.¹³

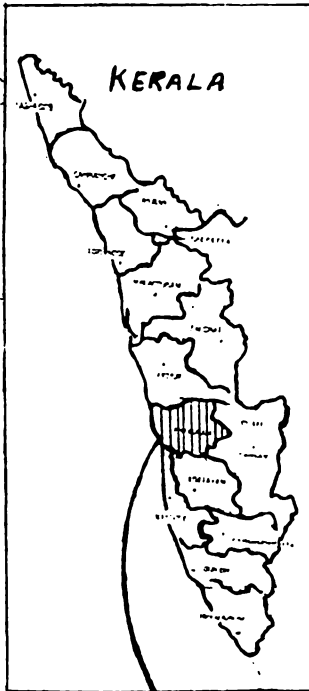
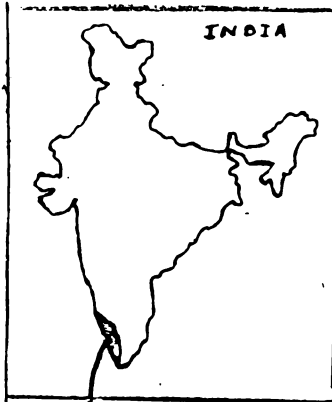
Ernakulam district is situated centrally in the state of Kerala. It is bounded on the east by Idukki district, on the west by Arabian sea, on the south by Alleppy and Kottayam districts and on the north by Trichur district. The district falls under the `coastal sub region of the

13. Ibid., P.21.



Fig : 2.2.

MAP OF ERNAKULAM DISTRICT

ERNAKULAM DISTRICT



DISTRICT BOUNDARY ————
 TALUK BOUNDARY - - - - -
 C D BLOCK ————
 PANCHAYAT - - - - -
 DISTRICT HEADQUARTERS ■
 TALUK HEADQUARTERS ●

CORPORATION AREA 
 MUNICIPAL AREA 

west coast plains and ghat region-zone 12'. Map 2.2 explains the geographical position of Ernakulam district.

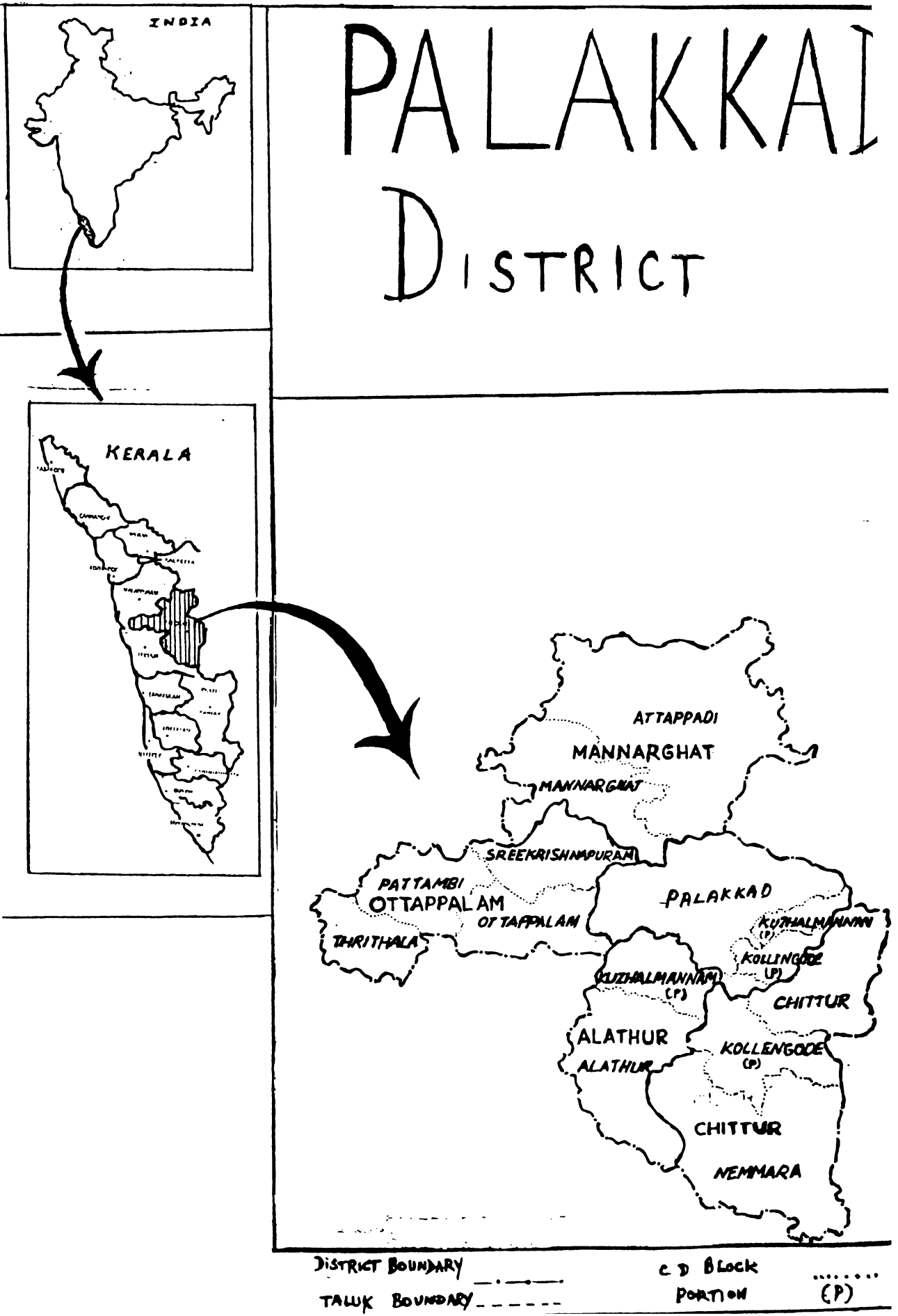
PALAKKAD

The share of forests in the total geographical area in the district is 31 per cent. Although rainfall in the district is comparatively lower, two major and five minor irrigation projects provide perennial irrigation to about 85,000 hectares of land. The district has a total population of 23.76 lakhs with a density of 530 persons per sq.km. The literacy rate in the district is 69.78 per cent. There are 224 branches of banks in the district, of which 105 are private sector banks. The credit deposit ratio of the district is low at 45.29 per cent. The achievement of the district in disbursement to priority sector shows consistent improvement. While the disbursement in the year 1989-'90 was Rs 52.38 crores, it improved to 56.09 crores in 1990-'91 and to 69.07 crores in 1991-'92. The shares of agriculture, industry and service sectors were in the order of 59, 9 and 32 per cent respectively. The share of agriculture in the total lending was 27.35 per cent.¹⁴

Palakkad district is situated almost in the central part of the state and is one of the five districts in the state with no coastal line. The district lies between north latitudes 10° 46' and 10° 59' and east longitudes 76° 28' and 76° 39'. It is bounded on the north and north-west by Malappuram district, on the south by Trichur district and on the east by Coimbatore district of Tamil Nadu. Map 2.3 explains the geographical position of Palakkad district.

Table 2.5 highlights the disbursements of refinance in Kerala from 1982 - '92. The cumulative disbursements show

14. Ibid., P.23.



that the PH sector was ranked first and the MI second. PH and MI together constitute 70.1 per cent of the total disbursements at the state level.

Table 2.6 explains the district-wise disbursement of refinance from 1990-'91 to 1991-'92. In Pathanamthitta district the PH and MI sectors together constitute 84 per cent of the total disbursements. While in Ernakulam district the two schemes together form 73 per cent of the total refinance disbursed, in Palakkad district it was 78 per cent. Hence table 2.5 and table 2.6 show that the PH and MI sectors constitute the lions share of NABARD's Rural Schematic Refinance.

SELECTION OF SCHEMES

In order to study the operations of NABARD through schematic lending two schemes were surveyed and studied. The projects¹⁵ disbursed in Kerala for various purposes from 1987-'88 to 1991-'92 were taken as the population of the projects disbursed. The scheme-wise classification of the projects in each district was based on the state-wise and district-wise weightage of schemes. At the state and district level together the Plantation and Minor Irrigation schemes constitute the lions share of more than 75 per cent in NABARD's total refinance. So in the selected districts of Pathanamthitta, Ernakulam and Palakkad, the two major schemes of Plantation and Minor Irrigation were selected. Table 2.5 and table 2.6 explain it with data.

The total number of projects disbursed in Kerala for Plantation-Horticulture (PH) and Minor Irrigation (MI) from 1987-'88

15. By 'project' is meant one lending under a scheme for which NABARD disburses its refinance. For example, a Rubber Plantation Development Scheme in Ranni block of Pathanamthitta district is a project of investment under rubber plantation crop, which is broadly classified under the scheme head-Plantation and Horticulture. One such project consists of a large number of beneficiaries.

TABLE :2.5.

DISBURSEMENT OF REFINANCE 1982 - '92 IN KERALA STATE (1982-'92)
RS. IN LAKHS

YEAR	MI	PH	LD	FIS	DD	OTHERS	TOTAL
1982 - 83	512	980	10	20	40	100	1,662
1983 - 84	550	1,190	40	40	80	546	2,446
1984 - 85	940	1,220	40	40	530	93	2,863
1985 - 86	970	1,900	50	50	154	203	3,327
1986 - 87	1,480	1,820	15	100	181	284	3,880
1987 - 88	1,500	1,450	70	80	293	602	3,995
1988 - 89	1,450	1,560	120	90	244	1,891	5,355
1989 - 90	1,610	2,610	160	120	393	1,365	6,258
1990 - 91	1,920	2,260	200	130	405	1,503	6,418
1991 - 92	1,960	2,250	240	136	504	1,684	6,774
TOTAL	12,892	17,240	945	806	2,824	8,271	42,978
RANK	II	I	V	VI	IV	III	

SOURCE : NABARD ANNUAL REPORT FOR THE YEARS FROM 1982 - 83 to 1991-'92

INDEX: MI : MINOR IRRIGATION FIS : FISHERIES

(INCLUDES NPMA)

LD : LAND DEVELOPMENT OTH:OTHERS

PH : PLANTATION/HORTICULTURE DD : DAIRY DEVELOPMENT

OTHERS : PF : POULTRY FARMING

S/G/P : SHEEP/GOAT/PIGGERY

SMY : STORAGE AND MARKET YARD

TABLE :2.6.

DISTRICT WISE DISBURSEMENT OF REFINANCE 1990 - '91 TO 1991 - '92.

DISTRICT	(RS. IN LAKHS)							
	MI	PH	LD	FIS	DD	OTHERS	G.TOTAL	TOTAL (II)
PATHANAMTHITTA	68.54	276.13	0.17	5.04	36.80	22.56	409.24	386.68
ERNAKULAM	102.66	297.43	12.12	60.00	38.25	36.96	547.42	510.46
PALAKKAD	221.20	442.40	9.45	0.59	135.48	40.50	849.62	809.12

SOURCE : NABARD REGIONAL OFFICE , THIRUVANTHAPURAM.

MI : MINOR IRRIGATION

LD : LAND DEVELOPMENT

PH : PLANTATION/HORTICULTURE

[NO PURPOSE WISE DISBURSEMENT UNDER THE CATEGORY OTHERS IS STUDIED,

SINCE THE SEVEN PURPOSES WHICH COME UNDER OTHERS CONTRIBUTE ONLY LESS THAN 1% EACH TO THE TOTAL]

FIS : FISHERIES

DD : DAIRY DEVELOPMENT

TOTAL (II) - TOTAL EXCLUDING OTHERS

OTHERS: PF, S/G/P, BIOGAS, S/MY, FORESTRY.

TABLE :2.7.

DISBURSEMENT OF SCHEME WISE REFINANCE DURING 1990 - '91 TO 1991 - '92.

(RS. IN LAKHS)

DISTRICT	PLANTATION		MINOR IRRIGATION		TOTAL		DISTRICT - WISE DISBURSEMENT OF THE QUANTUM OF REFINANCE %
	DISBURSEMENT OF REFINANCE	%	DISBURSEMENT OF REFINANCE	%	DISBURSEMENT OF REFINANCE	%	
PATHANAMTHITTA	276	80	69	20	345	100	24.5
ERNAKULAM	297	74	103	26	400	100	28.5
PALAKKAD	442	67	221	33	663	100	47
TOTAL	1,015	72	393	28	1,408	100	100

SOURCE : NABARD, REGIONAL OFFICE,
THIRUVANTHAPURAM.

to 1991-'92 was 1282. Five per cent of the population was selected. Thus 64 projects were used as a base for selection of the beneficiaries. The scheme-wise classification of the projects in each district was based on the state-wise and district-wise weightage and ranking of schemes. The percentage-wise ratios for Plantation and Minor Irrigation schemes were 79 per cent and 21 per cent respectively. The total number of beneficiaries under 64 projects taken in the ratio 51:13 was 2445.¹⁶ Ten per cent of the beneficiary population i.e. 245 beneficiaries were selected. The beneficiaries were divided between the districts based on the quantum of refinance disbursed in the district. The 245 beneficiaries were divided between the districts of Pathanamthitta, Ernakulam and Palakkad in the ratio 60:70:115 respectively. Table 2.7 explains the district-wise disbursements of refinance for Plantation-Horticulture and Minor Irrigation during 1990-91 to 1991-'92.

From table 2.7 it is clear that in Pathanamthitta district 80 per cent of the beneficiaries were selected from the plantation sector and 20 per cent from Minor Irrigation. The percentage-wise weightage of the schemes in Ernakulam and Palakkad are explained in a similar manner. Table 2.7 also gives information on the quantum of refinance for the two schemes in the selected districts.

SELECTION OF THE CLIENT BANKS

The beneficiaries were further divided between the client banks or the agencies¹⁷ of NABARD. This was based on the proportionate weightage of each agency to the refinance disbursed.

16. NABARD - 'District Oriented Monitoring Study Report', of various districts for various years. In it one Plantation project consists of an approximate average of 25 beneficiaries. i.e. $51 \times 25 = 1,275$. One Minor Irrigation project consists of an approximate average of 90 beneficiaries i.e. $13 \times 90 = 1,170$. So $1,275 + 1,170 = 2,445$.

17. By agencies are meant, State Land Development Banks (SLDBs), Commercial banks (CBs), State Co-operative Banks (SCBs) and Regional Rural Banks (RRBs).

TABLE :2.8.

AGENCY WISE AMOUNT AND PERCENTAGE OF REFERENCE DISBURSED (1989 - '90 TO 1991 - '92.)
(RS. IN LAKHS)

YEAR	S.L.D.B	C.B.	S.C.B.	R.R.B.	TOTAL
1989 - 90 to'91 - 92	8,929	8,953	5,340	1,397	24,619
PERCENTAGE	36.27	36.37	21.69	5.67	100.00

SOURCE : NABARD, ANNUAL REPORT (1989-'90 TO 1991 - '92)

TABLE :2.9.

AGENCY WISE AND SCHEME WISE CLASSIFICATION OF BENEFICIARIES
AND SCHEME WISE CLASSIFICATION OF NON-BENEFICIARIES IN THE SELECTED DISTRICTS
(RS. IN LAKHS)

DISTRICT	SCHEME	BENEFICIARIES			NON-BENEFICIARIES	
		AGENCY		TOTAL	TOTAL	B+NB
		C.B.	S.L.D.B			TOTAL
PATHANAMTHITTA	PLANTATION	24	24	48	14	62
	MINOR IRRIG.	6	6	12	4	16
	TOTAL	30	30	60	18	78
ERNAKULAM	PLANTATION	26	26	52	16	68
	MINOR IRRIG.	9	9	18	6	24
	TOTAL	35	35	70	22	92
PALAKKAD	PLANTATION	39	38	77	23	100
	MINOR IRRIG.	19	19	38	12	50
	TOTAL	58	57	115	35	150
GRAND TOTAL		123	122	245	75	320

INDEX : C.B. - COMMERCIAL BANK, S.L.D.B. - STATE AND DEVELOPMENT BANK

B+NB - BENEFICIARIES AND NON-BENEFICIARIES

SOURCE : SURVEY DATA

Table 2.8 shows that the SLDBs and CBs disburse the major share of NABARD's refinance. The two agencies together disburse 72.64 per cent of the total lending. The SCBs and RRBs have not been selected as the SLDBs and CBs are the major representatives of the co-operative and commercial banking sectors. Secondary data shows that SCBs and RRBs follow the same trend as those of SLDBs and CBs respectively. Hence the two agencies selected for the study are the SLDBs and CBs.

Along with the Beneficiary sample, a control group consisting of Non-Beneficiaries was selected at random from each district. The non-beneficiaries constitute 30 per cent of the sample. The total number of non-beneficiaries selected was 75. The non-beneficiaries were divided between the districts of Pathanamthitta, Ernakulam and Palakkad in the ratio 18:22:35 respectively. Hence the total sample size for the study consists of 320 farmers.

A total of 320 farmers were surveyed, of which 245 farmers were beneficiaries and 75 farmers non-beneficiaries. Of the 245 beneficiaries, 123 beneficiaries availed loans from commercial banks (CBs) and 122 beneficiaries from State Land Development Banks (SLDBs). The 75 non-beneficiaries were divided between the two schemes viz Plantation and Minor Irrigation in the ratio 53:22. A more detailed analysis of Table 2.9 shows that in Palakkad district a total of 150 farmers were surveyed, of which 100 were from Plantation and 50 from Minor Irrigation. Of the 100 Plantation farmers, 77 were beneficiaries and 23 non-beneficiaries. Of the 77 plantation farmers, 39 availed loan

18. The Kerala state average for each agency is taken as the proxy as the district-wise distribution follows the same pattern as the state average.

from CBs and 38 from SLDBs. Of the 50 farmers availing minor irrigation loan facility in PKD, 38 were beneficiaries taking loan from banks and 12 non-beneficiaries. Thus in Palakkad district, of the 150 farmers, 115 were beneficiaries and 35 non-beneficiaries. The other districts, EKM and PTA are explained in a similar manner.

SURVEY SCHEDULE

Two sets of schedules were used to study the schemes in the three districts. Schedule I refers to the plantation scheme and schedule II, Minor Irrigation. The schedule gathers information on (i) General Particulars (ii) Technical Aspects (iii) Financial Aspects and (iv) Infrastructural Aspects. Section (v) is exclusively to gather information on the impact of the scheme via Income, Employment and Asset Position. The pre-investment period was compared with the post-investment period. A set of follow-up questions were used to gather information on specific aspects. These follow-up questions were used to cross-check the data collected.

The schedule used to collect data from the non-beneficiary was the same as that of the beneficiary, except that the financial aspects were excluded and section (v) was modified to include only the post-investment period with no loan component.

ANALYSIS OF DATA

The required data were collected from the sample beneficiaries and non-beneficiaries by using a pre-tested and structured interview schedule. The primary data collected was classified district-wise, scheme-wise and agency-wise in order to facilitate comparative analysis.

While collecting data from the beneficiaries in the selected districts, informal discussions were also held with the various functionaries at the district, block and village levels, who were found involved in the implementation of the schemes. This exercise was done to cross check the information obtained from the selected beneficiaries. The data pertaining to the number of beneficiaries was collected from the records of NABARD's regional office at Thiruvananthapuram and data relating to the amount of loan and subsidy were collected from the records of the selected bank branches. The data on the repayment of loans was also obtained from bank records. The basic information relating to non-beneficiaries (control group) for Rubber Plantation Scheme was collected from the Rubber Producers Society (RPS) and that for Minor Irrigation from the concerned block.

The data collected was tabulated and analysed by using statistical tools and methods like averages, percentages, ratios, 't' test, coefficient of variation, inter-temporal analysis, Multiple regression analysis and financial viability analysis.

Averages and percentages were used to study the nature and spread of data in the selected districts for the two schemes and between two agencies. Ratios like the Net Incremental Income ratio, Incremental Income Investment ratio, Incremental Output Cost ratio and per hectare average ratios were used. 'T' tests and coefficient of variation were also used to study the spread, differences and trend of data.

In order to find out the impact of the various schemes on the income, employment and asset position of the selected beneficiaries, the inter-temporal (before-after) method was used, wherein the pre-loan income, employment and asset position of the selected beneficiaries were compared with that of their post-loan levels. The

difference found between the two points of time were attributed to the impact of the loan.

REGRESSION ANALYSIS

To study the functional relationship between recovery and the related variables on a district and pooled basis a multiple regression model was used. A further step to study the cause-effect relationship between recovery and the related variables from the Borrowers angle and Lenders angle was worked out. The Multiple Regression Analysis on the factors affecting Loan Recovery is given below.

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots\dots\dots b_{11}X_{11}$$

Where Y = Recovery and x_1, x_2, \dots, x_{11} are the variables affecting recovery.

Loan Recovery, from the Borrowers Angle.

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 \quad \text{Where}$$

x_1 = Farm size of the beneficiary (MF, SF, MEF and LF)

x_2 = Annual Expenditure (in Rs)

x_3 = Annual Income (in Rs)

x_4 = Income generated from the project (in Rs)

x_5 = Financial viability of the scheme

Loan Recovery from the Lenders Angle is given as

$$Y = a + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} \quad \text{where}$$

x_6 = Credit gap.¹⁹ (in Rs)

19. By credit gap is meant the gap between the actual credit required and the amount supplied

x_7 = General lending(In Rs.)

x_8 = Schematic Lending. (In Rs.)

x_9 = Loan Size (in Rs).

x_{10} = Commercial Bank Lending (in Rs) (ie, type of client bank).

x_{11} = Follow-up action (ie, by NABARD officials)

FINANCIAL VIABILITY ANALYSIS

In order to study the financial viability of the two schemes, the Benefit Cost Ratio was used at a discount factor of 15%. The benefit-cost ratio gives the returns per rupee invested during the entire productive life period of the farm investment.

It is the
$$\frac{\text{Present worth of Benefits.}}{\text{Present worth of Costs.}}$$

The investment can be justified if the benefit-cost ratio is more than one.

LIMITATIONS OF THE STUDY

1.The scope of the study, though of a national level institution like NABARD, is limited to one state, viz, Kerala due to various constraints.

2.Only the schematic refinance operations of NABARD have been used to assess the role of the National Bank. In schematic refinance only the plantation and minor irrigation schemes were selected for the study

3. Only two client banks of the National Bank namely Commercial banks and State Land Development banks were selected for the study.The term 'SLDB' is used for the client bank instead of 'KSCARDB' as SLDB is the name used by the National Bank in its Annual Report.

4. The study is limited to the agricultural sector only. The Automatic Refinance Disbursements, the Full Refinance Support System and the Non-Farm sector disbursements do not come under the purview of the study.

5. Except for a micro incorporation of the opportunity cost principle, the other secondary benefits of the project have not been included for economic analysis. The major consideration has been only the financial viability aspect.

STRUCTURE OF THE THESIS

The thesis is divided into eight chapters. The introductory chapter highlights the genesis, functions, objectives and performance of the National Bank for Agriculture and Rural development.

The Research Design is given in the second chapter. This chapter explains the significance of the study, the research problem, objectives, hypotheses, methodology and data base, analysis of data, limitations and structure of the thesis.

Chapter three presents a Review of Literature on the subject. It is divided into three major sections. Section I highlights a review of theoretical issues and section II is on empirical issues. Section II is further divided into five parts. The first part deals with the Credit requirement and the corresponding supply : an appraisal in India. Part two explains the review of the schemes namely Rubber Plantation Development Scheme and Minor Irrigation Scheme. The third part highlights the loan repayment aspect. Part four explains the commitment utilisation gap of credit and part five deals with the viability of loans. Section III explains the Research Gaps Identified.

The fourth chapter is dedicated for analysing the Growth Trend and Distribution Pattern of Rural Schematic Refinance. It explains the importance of rural credit in India, the structure and growth of rural institutional credit in India, the operations of NABARD in India, Rural schematic refinance in India, operations of NABARD in Kerala, NABARD's assistance to agriculture and allied activities in Kerala, NABARD's sectoral review of schematic refinance support, the growth trend and distribution pattern of rural schematic refinance in Kerala and the role of voluntary organisations and self-help groups on NABARD's operations.

The Performance Evaluation of the Rubber Plantation Development Scheme in the selected districts of Pathanamthitta, Ernakulam and Palakkad are analysed in the fifth chapter. It studies the various aspects of the sample population. The study covers the general particulars, technical particulars, financial particulars, infrastructural particulars, opportunity cost particulars and impact of the scheme via income, employment and asset position. It also studies the differences between the beneficiary and the control group.

The sixth chapter explains the Performance Evaluation of the Minor Irrigation Scheme. The study analysis ideas and aspects similar to chapter five but with reference to the minor irrigation scheme.

The inter-comparison, lending efficiency and financial viability analysis of the two schemes are given in chapter seven. The criteria used to measure lending efficiency was the loan repayment aspect. Benefit-Cost ratio using discount factor was used to study the financial viability aspect.

Chapter eight contains a summary of the major findings, conclusions and recommendations of the study. The survey schedule

and the tables supporting the analytical work in the thesis are appended at the end of the thesis. The Bibliography is also given.

CHAPTER 3



REVIEW OF
LITERATURE

CHAPTER 3

REVIEW OF LITERATURE

This chapter presents a review of available literature on the subject. Both theoretical and empirical issues are reviewed in order to understand problems and issues related to the present study. The first section reviews the theoretical propositions enunciated by different economists on the role of credit/capital in economic development. The efficiency and viability of financial institutions are also reviewed in this section. The second section presents a review of empirical studies conducted by (1) Government organisations, (2) Review Committees (ACRC, Banking commission), (3) Research institutions and (4) Individual researchers on the role and the impact of banking institutions and their credit schemes.

SECTION-1

REVIEW OF THEORETICAL ISSUES

Financial intermediation has been recognised as an important source in the search for ways to improve the growth prospects. The pace and pattern of economic development are a function, as Adam Smith very perceptively observed two centuries ago, of the sequential and circular relationship between the growth of division of labour and the extent of the market for real goods and services. The innovations in money and finance tend to increase the size and the extent of exchange relationship or markets and thus promote division of labour, leading to increasing returns to scale and technical change.

The role and diffusion of innovations in the process of economic development have been well recognised in the literature since the seminal works of Marx, Schumpeter and Kuznets. However, little attention was paid to the significance of social innovations and in particular, financial and fiscal innovations. Financial innovations tend to reduce transaction costs and risk both -subjective and objective- and as result bring about widening, deepening and integration of capital markets. Such financial development accelerated the pace of economic development through its favourable impact on saving, investment and output.¹

Role of Capital and Credit in Economic Development

In classical economic theory, division of labour retained its status as a device which enhances productivity of labour, but later the emphasis was shifted to accumulation of capital as the prime force behind growth. This is, of course, linked to the idea that production needs advances, and the proposition that the larger the advances the more productive will be the labour. Smith also changed the emphasis in another respect; he formally defined 'capital' as that part of a person's stock of commodities which is expected to yield income. According to him Fixed capital 'facilitates' labour by increasing its effectiveness, circulating capital 'abridges' by providing advances.²

1. Bhatt, V.V. "On Financial Innovations and Credit Market Evolution", Economic and Political Weekly, Vol. XX, No.44, November 2, 1985, P.1889.

2. John, Eatwell et al.(ed.), The New Palgrave: A Dictionary of Economics in Four Volumes, Vol.I, United Kingdom, MacMillan Press Limited, 1987, P.329.

Upto 1930's there were different versions of neo-classical theory as far as the treatment of capital as a factor of production was concerned.(Stigler).³ The most contentious version was the Austrian one as worked out by Bohm Bawerk.⁴ To some extent it was foreshadowed by Jevons.⁵ There was a clear picture in Jevons of the necessity of money capital which was 'invested' in the form of advances in time consuming production processes. Jevons formulated a temporal production function which postulated that there were diminishing marginal returns to the length of investment of such advances: and used it to derive the marginal product of an extension of that length, which clearly was a measure for the capital intensity of production. Bohm Bawerk, by contrast developed a theory of production where he mentions that production requires time, and hence needs advances in the form of capital goods. The Austrian theory of capital was more traditional than other versions of neo-classical theory which gave up the advances view of capital. Thus Wicksteed⁶ placed all factors of production on an equal footing including all kinds of capital goods and postulated that the product being a function of the factors of production we have $p = f(a, b, c\dots)$. Marshall⁷ argued in a similar way although he kept to the classical

3. Stigler, G.J., Production and Distribution Theories, New York, MacMillan, 1941, In *The New Palgrave: A Dictionary of Economics* P.330.

4. Bohm, Bawerk E. Von, Kapital und Kapitalzins Zweite Abteilung: Positive Theorie des Kapitals 1889, Translation of first edition as 'The Positive Theory of capital', London, MacMillan, 1891, In *The New Palgrave*, Op. cit.

5. Jevons, W.S., The Theory of Political Economy, London, MacMillan, 1871, In *The New Palgrave*, Op. cit.

6. Wicksteed, P.H., An Essay on the Co-ordination of the Laws of Distribution, London, MacMillan, 1894, P.4.

7. Marshall, A., Principles of Economics, London, MacMillan, 1890, In *The New Palgrave: A Dictionary of Economics*, Op. cit., P.330

tradition by reserving a place for money capital. Clark⁸ also rejected the advanced view of production.

According to W.W. Rostow the take off is such a decisive transition in society's history that it was important to examine the nature and inner mechanism of take off. A considerable capacity to mobilize capital from domestic sources, affects the take offs and gives to growth an on going character. Some take-offs had occurred with virtually no capital imports for eg: Britain. Some take offs had a high component of foreign capital, for eg: The U.S., Russia and Canada. But some countries had imported large quantities of foreign capital for long periods, which undoubtedly contributed to creating of the pre conditions for take off without actually initiating take off, for eg: the Argentina before 1914, Venezuela down to recent years, and the Belgian Congo currently. The case for the -concept of take off hinges, in part, on quantitative evidence on the scale and productivity of investment in relation to population growth. Hence we face difficult problem, for investment data are not generally available for early stages of economic history. If we take the marginal capital/output ratio for an economy in its early stages of economic development at 3.5:1 and if we assume, as it was not abnormal, a population rise of 1-1.5 per cent per annum it was clear that something between 3.5 and 5.25 percent of NNP must be regularly invested if NNP per capita was to be sustained. If an increase of 2 per cent per annum in NNP per capita is required, under these assumptions, that something between 10.5 and 12.5 per cent of NNP must be regularly invested. By definition and assumptions, then a transition from relatively stagnant to substantial, regular rise in NNP per capita, under typical population conditions, required that the proportion of national product productively invested should move

8. Clark, J.B., The Distribution of Wealth, New York, MacMillan, 1899, P.119.

from somewhere in the vicinity of 5 per cent to something in the vicinity of 10 per cent. The two outstanding contemporary cases of economies attempting purposefully to take off were India and Communist China, both operating under national plans. The Indian first five year plan projected the growth process envisaged under assumptions similar to those mentioned above. The Indian Planning Commission estimated investment as 5 per cent of NNP in the initial year of the plan, 1951-52. Using a 3:1 marginal capital/output ratio, they envisaged a marginal savings rate of 20 per cent for the first five year plan, a 50 per cent rate thereafter, down to 1968-69 when the average proportion of income invested would level off at 20 per cent of NNP. The Indian effort may well be remembered in economic history as the first take off defined ex-ante in national product terms.⁹

According to Ragnar Nurkse, the vicious circle of poverty implies a circular constellation of forces tending to act and react upon one another in such a way as to keep a poor country in a state of poverty. The most important circular relationship of this kind are those that afflict the accumulation of capital in economically backward countries. On the supply side, the lack of capital was a result of the low saving capacity whereas on the demand side, the low level of productivity was a result of the small amount of capital used in production, which in its turn was caused at least partly by the low inducement to invest. That the incentive to apply capital was limited by the size of the market, had a certain validity not only in the exchange economy of the real world, but even in the economy of an isolated individual like Robinson Crusoe. The balanced growth doctrine put forward by Nurkse was relevant in this context mainly for the sake of its effects on the demand for capital. It appears in the present context as an essential means of enlarging the size of

9. Nurkse, Ragnar, Problems of Capital Formation in Underdeveloped Countries, Bombay, Oxford University Press, 1962, P.4

the market and of creating inducements to invest. In the present context the main point is to recognise how a frontal attack of that sort a wave of capital investment in a number of different industries can economically succeed while any substantial application of capital by an individual entrepreneur in any particular industry may be blocked or discouraged by the limitation of the pre-existing market. A wide range of projects, working with more real capital per head and with greater efficiency in terms of output per man-hour, will provide an enlarged market for the products of the new enterprises in the other industries. The economic contribution which capital can bring is concerned not simply with physical productivity but with value productivity.¹⁰

It is the need for investment in the social over-head capital, that makes capital building in a backward country such a 'lumpy' process. That is what renders the concept of marginal productivity of capital so difficult to apply in underdeveloped areas, whereas H.W. Singer remarks, the problem is not at all that of marginal additions but one of structural change and all round growth.¹¹ In reality, the investment function is not separated, or even separable from other economic functions. It is the private ownership and operation of business that makes for the private exercise of the investment function as a by-product. Capital formation can be permanently successful only in a capital conscious community, and this condition, which was just as important for continued maintenance as for the initial creation of capital was promoted by a wide diffusion of investment activity among individuals. From a view point broader than that of pure economics, capital is well

10. Rostow, W.W., The Stages of Economic Growth, London, Cambridge University Press, 1960, PP 39-48.

11. "Papers and Proceedings of the American Economic Association," American Economic Review, Vol. XLII, No. 2, May, 1952, P. 608.

described as a social heritage dependent upon the institutions and habit patterns of thought and action of individuals in society.¹²

When a man buys an investment or capital asset he purchases the right to the series of prospective returns which he expects to obtain from selling its output, after deducting the running expense of obtaining that output during the life of the asset. The relation between the prospective yield of one unit of capital and the cost of producing that unit furnishes the marginal efficiency of capital of that type of asset. The marginal efficiency of capital is equal to that rate of discount which would make the present value of the series of annuities given by the returns expected from the capital asset during its life just equal to its supply price. According to Keynes if there was an increased investment in any given type of capital during any period of time the marginal efficiency of that type of capital will diminish as the investment in it was increased, partly because the prospective yield would fall as the supply of that type of capital was increased, and partly because, as a rule, pressure on the facilities for producing that type of capital would cause its supply price to increase. It was obvious that the actual rate of current investment would be pushed to the point where there was no longer any class of capital asset of which the marginal efficiency exceeds the current rate of interest.¹³ The inducement to invest depends partly on the investment-demand schedule and partly on the rate of interest.¹⁴ Kalecki makes investment plans for any period a function of the firm's gross savings of the immediate past period and of the expected rate of profit. The gross savings are a proportion of the gross profit which was generated by the gross investment of that past period. Expected profit depend upon the gross investment of the

12. Keynes, J.M., The General Theory of Employment, Interest and Money, MacMillan, Cambridge University Press, 1973, P.135.

13. Ibid.

14. Ibid, P.137.

current period and the stock of capital. Thus investment schemes, while they were being carried out, encouraged further investment to be planned, but when they emerged from the pipeline as additions to the stock of capital, they discouraged further investment.

Role of Banks in Economic Development

Comprehensive studies on the contribution of banks to capital formation, may be classified under two distinct hypotheses: the financial repression hypothesis and the structuralist hypothesis.

Financial Repression Hypotheses

The financial repression hypothesis is associated with the works of Cameron, Mckinnan and Shaw.¹⁵ All the three authors are strong advocates of the efficacy of financial development in contributing significantly to the real growth of developing economies. They contend that the banking system was invariably growth-inducing and that only when it was repressed, which in their view was often the case, would it fail to make a positive contribution and act as an obstacle to real growth. The Free Banking School, one of the representatives of the British Monetary debates from the 1820's, supports this view.¹⁶ The financial repression hypothesis essentially preaches the virtues of reliance on market forces.

15. (a) Cameron, R(ed.), Banking and Economic Development: Some Lessons of History, New York, Oxford University Press, 1972, P.25.

(b) Mckinnan, R.J., Money and Capital in Economic Development, Washington, The Brookings Institution, 1973, PP.89-117.

(c) Shaw, Edward, Financial Deepening in Economic Development, London, Oxford University Press, 1973.

16. Schwartz, Anna J., In The New Palgrave: A Dictionary of Economics, Op. cit., PP.182-185.

According to the authors of this proposition, the financial system - primarily banking system in these economies - were most conducive to economic growth once it was allowed to operate under free-market direction. In summary, this hypothesis explains most, if not all, the factors contributing to the "poor" performance of the lagging economies in terms of internal policy induced distortions. Therefore, the more pervasive the government's intervention in terms of deposit and loan rates, in direct portfolio control and so on, the less responsive will the banking system be to economic development.

Another school of thought opposes the government intervention in the credit market and the provision of cheap credit through the formal credit institutions to the small borrowers but for other reasons. Von Pischke, Adams and Donald Graham are its advocates.¹⁷

The Structuralist Hypothesis

The structuralist hypothesis, better known as the Gerschenkron hypothesis¹⁸ is derived from historical interpretations of the role of banks in the capital formation processes of early European industrialisation. In generalising from the industrial capital needs and financial sources of early European industrialisation and in particular the English, German and Russian experiences, Gerschenkron concludes that the role of banking in industrial capital formation is determined by the relative backwardness of an economy and its structural peculiarities.

17. Von, Pischke J.D., et al.,(ed), Rural Financial Markets in Developing Countries- Their Use and Abuse, Baltimore, John Hopkins University Press, 1983.

18. Gerschenkron, Alexander, Economic Backwardness in Historical Perspective: A Book Of Essays, Cambridge, Harvard University Press, 1972, PP.12-45.

**Efficiency, Effectiveness and Viability of Financial Systems-
With special reference to India.**

The effectiveness and efficiency of the financial system necessitates a well integrated institutional and policy framework that can ensure macro-economic stability, competitive functioning of the financial markets, operational autonomy to the various financial institutions, efficient and innovative management of the constituent units of the system and the establishment of a sound framework for prudential regulation and supervision of the system that can inspire and sustain an environment of trust and confidence in the system. Interest rate and exchange rate policies, however sound, cannot improve by themselves the functioning of the system unless they form an integral part of such an institutional and policy framework. The financial system or sector serves the basic function of mobilising resources in the form of financial instruments and allocating them for productive uses in the light of sound criteria which tend to improve productive and investment efficiency.

The Indian financial system, as it has evolved, is comparable in many respects with the financial systems of the most advanced developed countries as well as some of the developing countries. It has a well diversified structure of financial institutions and instruments and in fact financial development has outpaced economic development.¹⁹ The Indian financial system had developed at a fairly rapid pace since 1951-52 and its growth rate exceeded the growth rate of gross domestic product or gross capital formation. The financial structure comprises not only of commercial and co - operative banks, but also a wide array of specialised development banks in the areas of agriculture, industry,

19. Bhatt, V.V., "On Improving Effectiveness and Efficiency of Financial System in India", Economic and Political Weekly, Vol.26, No.41, October 12 1991, P.2367.

external trade, housing tourism and social security and institutions like Mutual fund or Unit Trust. The structure of financial institutions is thus fairly well diversified.²⁰ The system has been quite effective in the mobilisation of financial resources, however, it has not been able to improve its own efficiency or reduce the transaction cost of the depositors and borrowers to any significant extent nor has it been able to perform adequately the function of progressively improving the investment and productive efficiency of the enterprises it finances.²¹

The current structural imbalances - monetary, fiscal, internal debt payments and external debt - heighten the inevitable uncertainty attached to all financial transactions. The root cause of all these structural imbalances related to the fiscal indiscipline, inefficiency and profligacy of the government sector, which has been having negative saving for well over a decade and its policy framework which relies more on cannoneer type commands and directives rather than on the inherent logic of the economic universe.²² Administrative controls and regulations or interventions, when essential for the purpose of accelerating the pace of development, should be minimum, selective and time bound and should be what Bhagwati calls 'prescriptive' rather than 'proscriptive'.²³

What was needed was a change in the organisational design of banks so as to facilitate the accomplishment of two major results - firstly to make rural banking viable and secondly to equip banks to

20. Ibid.

21. Ibid, P.2368.

22. Ibid, P.2372.

23. Jagdish, Bhagwati, Protectionism, Cambridge, Mass: The MIT Press, 1988, PP. 98-102.

foster development. Development, not lending, was to become the critical concern.²⁴ Profit on the transaction was no longer seen as the primary purpose of loaning and in many contexts, 'social purpose' was said to require certain kinds of loans to be given even at a loss. The social purpose has dictated the intensification of the involvement of banks with the priority sectors of agriculture, small industries, small business, small transport, retail trade etc. with an emphasis on the weaker sections.²⁵ In practice, not only were a large number of loans being issued to even the last category without any attempt to render them viable, but these were even given wide publicity as a measure of the banks' concern for the priority sectors and weaker sections. While policy makers and evaluators had in recent years been stressing the need to ensure that loaning is socially productive, the issue as yet lacks clarity. There are serious reservations about the social productivity of most loaning being undertaken in non-vital areas for non-vital people. It would not be sufficient to clarify perspective without also devising a suitable set of evaluative indices with reference to which policies could be conceived, plans made, operations undertaken and performance assessed. This was particularly necessary since, once one speaks of the social objectives of loaning, neither bank profits, nor the volume of loaning, nor the number of accounts, nor even the recovery performance are, by themselves, admissible as sufficient performance indicators. Social purposes will not be served merely by adding a suitable prefix to credit. Nor will area-wise or beneficiary group-wise allocation of credit necessarily serve the social purpose. For this to happen, the instrument has to be specifically designed and operated, concepts have to be clarified and suitable operational indicators need to be devised. In their absence it is absurd to speak of supervised credit.²⁶

24. Ranade, Sudhanshu, Rural Banking Adrift, Bombay, Jaico Publishing House, 1984, P.4.

25. Ibid., P.32

26. Ibid., PP.41-43

Banks today try to finance 'viable' schemes only. They do not try and develop the potential of schemes already viable. This inevitably limits their role and tends to perpetuate the established status quo between sections of the people and between geographical areas. There is a strong positive rank correlation between per capita income and advances per capita.²⁷

For a scheme of investment to be undertaken, the profit expected from it must exceed its interest cost by a considerable margin to cover the risk involved. The prospective rate of profit on the finance to be committed can be reduced to equality with the relevant rate of interest only, by subtracting a risk premium equal to the difference between them. To say that the required risk premium is low or high is then no more than saying that the propensity to invest is high or low.²⁸

Due to the high costs of rural banking The Committee to Review the Arrangements For Institutional Credit for Agriculture and Rural Development (CRAFICARD) had come to the conclusion that 'once it is recognised that rural lending is a social obligation and a plan priority, a way has to be found to subsidise it wherever necessary'. If social objectives justify losses on rural operations, then certainly it has to be subsidised; but only if there is valid reason to suppose that it is social priority, and not bank efficiency that is being subsidised.

The Raj Committee identified the problems faced by banks in rural lending consequent on the rapid growth in the number of

27. Ibid., P.49.

28. Robinson, Joan, Essays in the Theory of Economic Growth, London, MacMillan Press, 1962, P.37.

branches and their geographical spread over a wider area of operation, at times very remote from the head office of the bank. Dutt, member of the Raj Committee, states that 'Considering everything, it appears that structural cordoning of the bank operations in the rural area, in particular, is extremely essential, as that alone may lead to innovative banking in depth'.²⁹

Two specific aspects should be stressed while designing development banks:- Efficiency, that is, the operations should be conducted under conditions of an optimum structuring and utilisation capacity. The second aspect is that of the developmental function, that is the operations should be so designed as to have a developmental impact. The efficiency aspect encompasses the issues of the prices charged for services, the volume of business achieved and the cost at which the business is conducted. The rationale of providing development banking services is to increase the efficiency of the users of such services. But unless the beneficiaries of credit are made viable, the purveyors of credit cannot become viable.³⁰

Without financial viability the credit institutions would have to depend on annual appropriation from governments to help cover their costs and therefore would be susceptible to political influence.³¹

Regarding financial viability, it has been suggested to restrict mandatory lending and interest for a very small group while

29. Dutt, B.K., quoted from Ranade, Sudhanshu, Op.cit., P.54.

30. Ibid., P.78.

31. World Bank, Agricultural Credit: Sector Policy Paper No.3449, Washington, D.C., May 1975, P.40.

allowing flexibility in interest rate for the rest.³² The discussions on the cost effectiveness of rural banking brought out in sharp focus the dilemma of banks. Rural banking in the present context means the preparation of credit schemes, technical support, more intensive banking extension work and closer supervision on the end - use of thousands of small loans spread over many villages. On account of the adoption of Service Area Approach, even area planning work has become a part of the rural branch manager's work. This requires more time and cost per unit of business. While external agencies like NABARD and the government may give some support, the ultimate responsibility for sound lending and recovery of loans is that of banks. To the extent that these external agencies provide help through block level planning, preparation of credit schemes and recovery of loans, the rural banking work becomes more cost effective.³³

That the productivity level of Indian banks had always been dismally low in terms of resources employed is too well known a fact to be disputed. Yet what seems to have been overlooked due to perennial political or economic short-sightedness are the reasons for low productivity, whether they are genuine or not, and what can be done to reduce them in future. If one examines the basic issues closely, there were four main reasons why there was dismally low productivity in India's banking sector. Firstly the banking sector in India was subject to too many archaic rules and regulations. In reality, important decisions concerning banking policy and practice were taken by political leaders who have little or no understanding of the intricacies of banking. The nature of banking itself involves an element of risk taking, but in India, this

32. Shivamaggi, H.B., Review of the Book - Rural Credit Issues for the Nineties, Journal of Agricultural Economics, Vol.47, No.4, October-December 1992, PP.722-724.

33. Ibid.

was largely absent since the rewards for doing so were negligible. Despite so many banking committees having been formed the range, quality and the cost effectiveness of banking services had not improved commensurably. The absence of a committed human resource management strategy was another reason for the low productivity in Indian banks. Thirdly, the absence of a service industry concept in banking made bankers often forget that they exist because of the banking public and not vice versa. Low technology orientation is another important reason for low productivity. The situation in India is that training or investment technology always get low priority as they are often seen as unnecessary expenditures.³⁴

After reviewing some of the literature on credit and agricultural development, Bathrick³⁵ refutes the traditional simplistic view that the provision of low interest credit alone is the key to the economic development of the small farm sector. Ursula K.Hicks³⁶ also points out that in respect of credit for the little man there is considerable danger that a government may entangle itself in bad debts and open-ended subsidies which contribute little to development. So the administration of credit can usefully be combined with other agricultural services and advisory organization.

A host of studies, reports³⁷ and documents prepared by international organizations like Food and Agricultural Organization

34. Aditya, Samant, "Banking Sector: Low Productivity is a Cause for Concern " The Hindu, Business Line, June 22, 1994, P.4.

35. Bathrick, David D., Agricultural Credit for Small Farm Development: Policies and Practices, Colorado, Westview Press Inc., 1981.

36. Ursula, K. Hicks, Development Finance: Planning Control, Oxford, Oxford University Press, 1965, P.58.

37. There are many reports and to name a few:-

(1) CRAFICARD Report 1979 Op.cit.

(2) R.B.I. Report of the study Team on Overdues of Co-operative Credit Institutions, Bombay, RBI, 1974.

(FAO) and World Bank considered credit as an essential instrument for agriculture and rural development and pointed out that the technology should be modernized and the small farmers should be given special treatment. However, a glaring omission of that type of generalistic approach/theory was the inadequacy of attention to the interrelationship between the agrarian structure on the one hand, and the inadequacy of credit to small farmers and the preferred model of the institutional system of credit on the other.

The official goals of poverty-oriented development are multi-purpose and qualitative. Lack of goal, clarity and difficulty in measuring achievement allow the pursuit of informed political goals within development bureaucracies. Informal personalist management system also implies a liberal structure and hence greater scope for playing politics in the implementation process. The view point of the poor is one of coalition : a coalition of indifference to their needs. Conflict occurs primarily over the allocation of resources; but there is little perceived political advantage in using resources to maximum developmental effect once secured. The poor do not have the political voice to disturb this coalition. As a result, resources enter the bureaucratic system, but do not 'trickle down' to the intended beneficiaries.³⁸

The greatest implementation weaknesses seem to be in the programmes with the most direct impact on the poorest segments of the population, and in the more remote and poorer regions. A still more fundamental problem in estimating the importance of management constraint lies in the assumptions implicit in the evaluators criteria of success- whether results in the field are those required by the project plan? Deviations from these requirements

38. Richard Heaver, "Bureaucratic Politics and Incentives in the Management of Rural Development", World Bank Staff Working Paper, No.537, Washington D.C.,1982, P.4.

tend automatically to be put down to inadequacies of implementation. For example, in the current fashion for integrated rural development, major projects may be designed with emphasis on aspects of social infrastructure and community development which involve heavy administrative input for highly intangible results. Project management may feel that these somewhat ideal projects may go beyond what is required or expected by the farmers. Under these conditions, deviations from the project plan during implementation may make very good sense, but still be labelled symptoms of poor management according to standard evaluation criteria.³⁹

While the traditional systems looked from the top down, modern theories of development looked from bottom up, and saw the major administrative requirement as responsiveness to a 'clientele'. The key characteristics of the new development goals are their multi-purpose and qualitative nature, and the relative difficulty in measuring success in reaching them. The range of aims was both wide and often conflicting - growth versus equity, urban versus rural emphasis, and conflicting or complementing alternatives of sectoral development. The most obvious contrast was with management in the private sector where, by and large, there was a single criterion of success - profitability. Such a generally recognised criterion allowed the relative performance of individuals and departments to be measured and, broadly speaking, allowed the organisation to function on 'Zero-based' principles. The public development sector starts, by contrast, not with a zero-base, but with one actively unsuited to the present needs, and with ill-defined goals which impede the application of zero-based procedures to determine which parts of which organisations are making an inadequate or inappropriate contribution.⁴⁰

39. Ibid., P.6.

40. Ibid.

In the cost benefit calculation it was as if a series of photographs were taken of the project at successive year ends with cash flows artificially accumulated to those points for discounting. In contrast to this static approach, cost-benefit analysis should be seen as involving the construction of "implementation model" of the project, stressing dynamics and process as much as statics and quantity.⁴¹

Credit Rationing

Credit rationing is a condition of loan markets in which supply of loanable funds was less than the borrower demand at the quoted contract terms. Micro economic credit rationing theory states that for rationing to exist on a continuing basis in loan market, the interest rate must be maintained below the market clearing level by special factors. Usury and other interest rate ceilings represent an obvious case where exogeneously imposed restrictions are the sources of credit rationing. Hodgman⁴² was among the first to focus on risk of default as a source of credit rationing, but he recognised that default risk alone was not a sufficient condition for credit rationing to occur. The basic reason was that if the lender and the borrower share and dependably act on the same information concerning default, then the interest rate can accurately reflect any expected default behaviour. Default risk thus does not remove the incentive to raise the loan rate if there is excess demand. It was later recognised, however, that this rationing result depends on a peculiar form of asymmetrical information, in that the borrower must maintain an optimistic appraisal of the anticipated outcomes; while the lender considers default a certainty; otherwise there would be no basis for the excess demand.

41. Ibid., P.9.

42. Hodgman, D.R., "Credit Risk and Credit Rationing", Quarterly Journal of Economics, Vol.74, No.2, May 1960, PP.258-278.

Modern theory identifies the market failures of moral hazard and adverse selection as much more general features of the loan markets that can be source of credit rationing when there is asymmetrical information. Moral hazard and adverse selection occur when the interest rate or loan size chosen by the lender affects borrower behaviour (moral hazard) or the riskiness of the applicant pool (adverse selection). There was also a class of customer-relationship models, based on the premise that long-standing customers receive priority access to credit, but it appears that these models also require a basis in asymmetrical information to generate credit rationing.

Jaffee and Russel⁴³ developed a model of credit rationing based on moral hazard in the context of consumer loan model with competitive lenders. The key feature of the model is that the propensity for default by certain borrowers rises as they are offered larger loans. The zero-profit, loan-contract locus will therefore rise, with higher rates necessary to compensate lenders for the higher default experience on contracts with larger loans. The market-clearing contract was one point on this locus but there also exists an alternative rationing contract with a lower interest rate, a lower loan size, and thereby a lower average default rate. Borrowers with low default propensities prefer and are able to enforce this rationing contract as the market equilibrium. Given that the risk character of the individual borrowers and the projects cannot be identified a priori, it may be optimal policy for the lender to set the loan rate below the market-clearing level and to ration credit. In practice, loan default is a complex multi-dimensional process, and lenders have access to only relatively crude or costly devices for gaining information. It is thus unrealistic to assume that cost-effective

43. Jaffee, D. and Russel, T. "Imperfect Information, Uncertainty and Credit Rationing", Quarterly Journal of Economics, Vol. XC, No. 4, November, 1976, PP. 651-666.

use of these devices will reveal the precise risk attributes of individual borrowers.

The Next part examines the macro economic aspects of credit rationing. Empirical tests of the existence and effects of credit rationing generally use indirect methods based on proxies and other measures with an assumed relationship to actual rationing. Direct measures of credit rationing are uncommon because they require data on applications and rejections as well as loans made, and these are rarely available. The indirect methods used include survey data, proxy measures and cross-section and time series analysis. Jaffee⁴⁴ provides a discussion of the various techniques and evidence upto 1970.

Borrower surveys are made occasionally on an adhoc basis, usually to study the determinants of investment demand. Interest rates are consistently rated the most important financial variable but credit rationing is noted by about one-quarter of the firms; with a higher incidence among smaller firms. Lender surveys of loan rates and non-rate terms on business and mortgage loans are made on a continuing basis by the Federal Reserve and Federal Home Loan Bank systems, and some data are available for consumer loan markets as well. Scrutiny of these show that loan demand and corresponding real expenditure are negatively related to higher levels of the non-rate terms, such as higher collateral requirements, as well as to higher loan rate levels.

These results confirm that non-rate terms can be treated symmetrically with loan rates as components of the vector that

44. Jaffee, D., Credit Rationing and the Commercial Loan Market, New York, John Wiley, 1971.

determine the price of the loan (Baltensperger,⁴⁵ and Harris⁴⁶). There are alternative interpretations, however, with regard to the implications of this for credit rationing. In one view, the variability of non-price terms provide an offset to credit rationing, without an excess demand for loans and thereby the need for credit rationing can be reduced by higher levels of non-price terms.

Credit rationing proxy measures provide another empirical technique based on the theoretically expected effects of credit rationing. Most credit rationing theories imply that identifiably risk-free borrowers will not be rationed and therefore that a higher proportion of total loans made to risk-free borrowers can be associated with greater rationing of risky borrowers; given that the ratio of demand between risk-free and risky borrowers had no corresponding variation. Jaffee and Modigliani⁴⁷ implemented this technique, and test of proxy variable confirmed the existence of dynamic credit rationing, which occurs in the short-run as the loan rate adjusts to the market clearing or equilibrium level but did not consider equilibrium credit rationing which occurs in a continuing equilibrium with the loan rate maintained below a market-clearing level.

A variety of time series studies using special econometric methods for markets in disequilibrium had been carried out to test for the effects of credit rationing in mortgage and business loan

45. Baltensperger E., (a) "The Borrower Lender Relationship, Competitive Equilibrium and the Theory of Hedonic prices", American Economic Review, Vol.66, No.3, June 1976, PP.401 - 405. (b) "Credit rationing: Issues and Questions", Journal of Money, Credit and Banking, Vol.6, No.2, May, 1978, PP.170 - 183.

46. Harris D., "Credit Rationing at Commercial Banks: Some Empirical Evidence", Journal of Money, Credit and Banking, Vol.6, No.2, May 1974, PP.227-240.

47. Jaffee, D. and Modigliani, F., "A Theory and Test of Credit Rationing"., American Economic Review, Vol.59, No.5, December 1969, PP.850-872.

markets (Fair and Jaffee⁴⁸, Sealey⁴⁹).

A basic explanation was that rationed firms may have access to alternative forms of credit. Recent discussions regarding credit rationing and monetary policy were taking place in the context of the major financial market innovations and deregulation of the early 1980's. The competitive and innovative forces in financial markets were expanding rapidly with the result that loan markets, which specialize in originating risky instruments and capital markets, which traditionally trade low-risk securities, were becoming integrated. This process includes the entry of capital market firms directly into loan markets, and the development of new capital market securities that consist of individual loans and that carry insurance or other guarantees against default. A possible result was that credit rationing and the availability channel of monetary policy would become less important features of the financial markets.

At the same time, the unique role played by loan markets and lending institutions in allocating capital to risky borrowers has received renewed attention (Bernanke⁵⁰, Blinder and Stiglitz⁵¹,

48. Fair, R. and Jaffee, D., "Methods of Estimation for Markets in Disequilibrium"; Econometrica, Vol. 40, No. 3, May, 1972, PP. 497-514.

49. Sealey C., "Credit Rationing in the Commercial Loan Market: Estimates of A Structural Model Under Conditions of Disequilibrium", Journal of Finance, Vol. 34, No. 3, June 1979, PP. 689-702.

50. Bernanke, B., "Nonmonetary Effects of the Financial Collapse in the Propagation of the Great Depression", American Economic Review, Vol. 73, No. 3, June, 1983, PP. 257-276.

51. Blinder, A. and Stiglitz, J., "Money, Credit Constraints and Economic Activity"; American Economic Review, Vol. 73, No. 2, May, 1983, PP. 297-320.

Stiglitz⁵² Also it has been argued that credit flows may provide a better indicator for monetary policy than traditional money supply measures (Friedman⁵³). Consequently, while the recent innovations and deregulation may change the location and reduce the magnitude of credit rationing, they do not change the fundamental problems of market failure under asymmetrical information, and credit rationing in one form or another is likely to continue.

52. Stiglitz, J., "Credit Markets and Control of Capital", Journal of Money, Credit and Banking, Vol.17, No.2, May, 1985, PP.133 - 152.

53. Friedman, B., "The Roles of Money and Credit in Macro Economic Analysis" In the Macro Economics, Prices and Quantities: Essays in Memory of Arthur Okun, (ed.) J.Tobin, Washington D.C.: Brookings Institutions, 1983.

SECTION II

REVIEW OF EMPIRICAL ISSUES

This section reviews the aspects and issues studied by various agencies, institutions, review committees and individual researchers on rural credit. The various issues are broadly classified under five heads:

1. Credit requirement and Supply:- An Assessement with Reference to India and Kerala.
2. Review of:
 - (a) Rubber Plantation Development Scheme.
 - (b) Minor Irrigation Scheme.
3. Loan Repayment.
4. Commitment Utilisation gap of credit.
5. Viability of loans.

1. CREDIT REQUIREMENT AND SUPPLY: AN ASSESSEMENT WITH REFERENCE TO INDIA

Between 1951-'52 and 1991-'92, the contribution of agricultural sector to GNP at 1980-'81 prices grew by 169 per cent, whereas that of the other sectors grew by 610 per cent. But the Per capita income in the agricultural sector grew only by 28 per cent during the same period, while that of the other sectors grew by 154 per cent. The deficient and inadequate credit delivery system was cited as one among the various reasons for the lagged agricultural development.⁵⁴

54. "Agriculture, A Low Growth Sector", The Indian Express, March 14,1993, P.15.

A large population was in need of a better infrastructure as also credit. The point was that there exists diverse agencies claiming to provide assistance of various kinds, but their activities are not co-ordinated. There was thus a large, genuine demand for credit which was not met even today by the official institutions and there was also a large latent demand for credit from those who needed a helping hand to put them on the road to viability. The total demand for credit which remains unsatisfied today is substantial. There was no hope of such a large demand for additional credit being met, nor would that be either feasible or even necessary. But a phased programme over a period of five years should be (a) manageable and feasible from the bank's point of view, and (b) feasible also from the point of view of the economy as a whole. According to 1987 statistics there were more than 25,000 bank branches in rural areas. If a fifth of the target group (i.e. around 10 million producers) was to be tackled every year that would involve only about 400 new accounts per bank branch per year on an average. But the problem was how to find viable borrowers and the inflationary impact of the additional credit created was also to be looked into.⁵⁵

The ACRC estimate shows that direct demand for agricultural credit would gradually rise from Rs.27,551 crores in 1994-'95 and further to Rs.1,10,873 crores in 1999-2000. As against this, the resources available in the banking system would be of an order of Rs.28,694, Rs.51,829 and Rs.89,447 crores respectively in these years. The resulting deficits of Rs.5,487 crores in 1994-'95 and Rs.21,426 crore in 1999-2000 could be met by the banking system by following an aggressive deposit mobilisation for which the ACRC has made several suggestions and through refinance

55. Ghosh, Arun, "Monetary Targeting and the Banking Sector", Economic and Political Weekly, Vol.22, No.1-2, 1987, PP.13-16.

facilities of NABARD.⁵⁶

During the ten year period between 1976 and 1986, short term loans and advances of Commercial Banks to the agricultural sector had gone up from Rs.212 crores to Rs.1,252 crores (about five fold), while term loans had increased from Rs.192 crores to Rs.1,476 crores (seven fold). The short-term and long-term loans extended by Primary Agricultural Credit Societies (PACS) increased from Rs.203 crores in 1961 to Rs.3,140 crores in 1986, a point to point rise of 14 per cent in 25 years. In the long term co-operative system, i.e., the State Land Development Banks(SLDBs), the loans extended by the system grew from Rs.56 crores to Rs.533 crores - a nine-fold increase in twenty years between 1966 and 1986. Thus institutional credit had been extended quantitatively to a very large number of borrowers.⁵⁷

In 1976 the National Commission on Agriculture (NCA) estimated the future credit requirements in India. In 1984-'85 it was estimated at Rs.29,277 crores, in 1990 at Rs.33,560 crores, in 1995 Rs.39,248 crores and in 2000 as Rs.48,621 crores. The credit supply in 1984-'85 formed only 11.57 per cent of the credit requirements. This indicated that the institutional credit had a very low coverage of the estimated credit requirements.⁵⁸

The institutional credit system for agriculture in India, particularly for short-term loans was dominated by PACS. In order to reach the estimated level of short-term credit requirements, the cost - effective method of reaching the large farmer should be

56. Khusro,A.M., Reserve Bank of India, Report of the Agricultural Credit Review Committee, Chapter I, Bombay, 1989, PP.3.

57. Ibid,P.9-10.

58. Desai,D.K., "Institutional Credit Requirement for Agricultural Production - 2000 A.D"., Indian Journal of Agricultural Economics, Vol.43, No.3, July-September, 1988, P.346.

adopted. Efforts should be made to increase the efficiency and make the short-term lending a profitable business for the co-operative sector. The restriction on Regional Rural Banks to serve only the small and marginal farmer should be removed and they should be asked to undertake the business of short-term credit to all farmers.

The total credit requirement for agricultural production subsystem at the reduced level for the short-term credit requirement of crop production works out to be Rs.14,050 crores in 1990, Rs.28,700 crores in 1995 and Rs.49,200 crores in 2000 A.D. This means that in the immediate future the total credit would have to grow at the rate of 20.82 per cent during the period 1984-'85 to 1990. However, if the longer period of 10 years was taken into account (i.e. upto the year 1995), the required growth rate to achieve the estimated level of credit requirement would be 18.06 per cent and if the period of 15 years is considered (i.e. upto the year 2000 A.D.), the growth rate required could be 15.80 per cent already achieved during the period 1974-'75 to 1984-'85. Thus the estimation of total credit by the year 2000 A.D. appears realistic.⁵⁹

A study conducted by A.K. Roy in Mogra block in Hoogly district of West Bengal for estimation of demand for and supply of credit used a Parametric Linear Programming (PLP) approach. This approach was used to derive the demand for inputs, (including credit) or the supply of an output which was a more inclusive technique which takes explicit cognizance of the substitution possibility among crop activities and also the restricted supplies of farm resources. Considering the relative merits and demerits of the available techniques the parametric linear programming technique was used in the study to derive the step demand functions for borrowing under restricted supply of land, family labour, irrigation

59. Ibid., P.351.

and even capital. No restriction was imposed on the amount of borrowing, a decision variable in the PLP model.⁶⁰

The Agricultural Credit Review Committee pointed out that the per hectare advances and outstandings by all the credit agencies were likewise the highest in Kerala at Rs.3,864, followed by Rs.2,091 in Tamil Nadu, Rs.1,552 in Punjab, Rs.1,349 in Andhra Pradesh, Rs.1,351 in Haryana, Rs.1,161 in Karnataka and Rs.1,018 in Gujarat.

In 1985-'86, on an average inputs worth Rs.1,713 per hectare were used by all the farmers put together. If this was compared with the amount of credit available per hectare namely Rs.297, an idea about the credit gap that exists in the farm sector can be derived.⁶¹

In the context of the above data, it would be useful to study the total farm loans issued by all credit institutions and the trend in the distribution of agricultural credit to various categories, namely size, group of farmers and hectare-wise. While estimating the credit requirement for the farm sector, the ACRC had assumed that only 60 per cent of the marginal and small farmers and 40 per cent of medium and large farmers would borrow production loans from the institutional sources by 1994-'95. The proportion would go upto 75 per cent for the Marginal and Small Farmers (MAS) and 50 per cent for the Medium and Large Farmers (MAL) by the end of the century. About 35 per cent of all the Marginal and Small Farmers were on the loan registers of the credit institutions for the purpose of production

60. Roy, A.K., "An Estimation of Demand for and Supply of Credit- A Parametric Linear Programming Approach", Agricultural Situation in India, Vol. XLII, No.3, June, 1987, P.149

61. Singh, Surjeeth (ed.), Rural Credit: Issues for the Nineties, New Delhi, Oxford and IBH publishing Co., 1991, P.32.

loans. The proportion of the medium and large farmers who were already dealing with the institutional sources of credit were as large as 58 per cent. In the case of MAS, efforts would be required to have an additional coverage as well as a larger quantum of credit. In Kerala, Haryana, Uttar Pradesh, Maharashtra and Punjab, the co-operative sector had contributed more than 50 per cent of the outstanding loans given to the MAS farmers.⁶²

The share of the institutional credit according to size - group of farms, hectare - coverage and the trend in the distribution of agricultural credit showed that in 1981-'82, the small and marginal farmers got much higher accounts both for short-term and long-term from institutional agencies. A comparison of the percentage distribution of credit supply and the area operated by different size - group of holdings in 1981-'82 revealed that the small and marginal farmers holding 26.27 per cent of the total operated area obtained 42.65 per cent of short-term credit, whereas medium farmers holding 50.92 per cent of the operated area obtained only 24.45 per cent of short-term credit.⁶³

Bank credit registered a lower growth rate of 11.4 per cent during the year ended September 1992 as against 12.2 per cent in the preceding year, while bank deposits more or less maintained the growth rate of over 17 per cent. Among the major states the rate of growth of deposits was the highest in Maharashtra, 31.5 per cent, followed by Kerala, 24.1 per cent and in Tamil Nadu it was 22.6 per cent. The growth rate of bank credit was the highest in Gujarat (16 per cent) followed by Jammu and Kashmir, Kerala (13.6 per cent each) and Maharashtra (13.1 per cent).⁶⁴

62. Reserve Bank of India Report of the Agricultural Credit Review Committee 1989, In Rural Credit: Issues for the Nineties, P.118-120.

63. Desai, D.K., Op.cit., P.330.

64. "Lower Growth in Bank Credit", The Indian Express, January, 28, 1993.

It is worth studying the contribution of the Apex National Bank, to the quantum and quality of rural credit. The refinance disbursed by it is broadly classified into three - short-term, medium-term and long-term credit. Refinance assistance for schematic lending is an important area of NABARD's operation. During the year 1990-'91 (April-March) NABARD sanctioned 10,650 schemes involving refinance commitments of Rs.2,119 crores as against 9,211 schemes involving Rs.2,039 crores of refinance commitment sanctioned during the corresponding period of the previous year. An aggregate sum of Rs.1,902 crores was disbursed by NABARD during the year 1990-'91 as against Rs.1,702 crores disbursed during the corresponding period of the previous year. As at the end of March 1991, the cumulative number of schemes sanctioned by NABARD stood at 89,513 with commitments of Rs.18,299 crores and the cumulative disbursements at Rs.14,310 crores. During the year 1991-'92 (April-March) NABARD sanctioned 6,706 schemes involving refinance commitment of Rs.2,236 crores, while NABARD's total disbursements under schematic lending amounted to Rs.2,054 crores. Upto the end of March 1992, the cumulative total of schemes sanctioned, committed and disbursed was Rs.96,219, Rs.20,535 and Rs.16,364 crores respectively. During 1989-'90, 1990-'91 and 1991-'92, IRDP accounted for the largest share of refinance disbursements, followed by minor irrigation and farm mechanisation. Total disbursements in less developed states amounted to Rs.928 crores in 1991-'92. Of the total disbursements of Rs.1,642 crores under refinance for minor irrigation, land development and diversified purposes during 1991-'92, the share of small farmers accounted for 81.5 per cent. NABARD's refinance for IRDP at the all-India level, cumulative total upto the end of March 1992 was Rs.4,290 crores, of which Rs.1,752 crores was the disbursement for the Industries Service and Business (ISB) component. NABARD and its relation to

the non-farm sector is worth noting.⁶⁵

During the year 1990-'91, the NABARD had enhanced the ceiling of individual loans under composite loan scheme from Rs.30,000 to Rs.50,000 and Integrated Loan Scheme from Rs.5 lakhs to Rs.7.5 lakhs to enable the financing banks to meet the genuine credit requirements of the entrepreneurs for setting up cottage, tiny, village and small scale industries. State Co-operative Banks have been allowed to avail of the National Banks refinance on an automatic basis for financing (through Central Co-operative Banks) Industrial Co-operative Societies upto Rs.7.5 lakhs. The Land Development Banks were given substantial assistance under the Composite Loan Scheme. The Integrated Loan Scheme had also been extended to them for financing non-farm activities up to Rs.7.5 lakhs. NABARD had conditioned its policy to support activities in the non-farm sector and the share of the non-farm sector in its total disbursements rose from 4 per cent in 1990-'91 to 5 per cent in 1991-'92. NABARD's disbursements under non-farm sector (outside IRDP) increased by Rs.24 crores or by 30 percent in 1991-'92.

A region-wise analysis of the disbursement of refinance by NABARD in 1991-'92 indicates that the northern region disbursed Rs.307 crores (15 per cent of total), the north-eastern region Rs.40 crores (2 percent), the eastern region Rs.228 crores (11 per cent), the central region Rs.540 crores (26 per cent), the western region Rs.349 crores (17 per cent) and southern region Rs.590 crores (29 per cent).⁶⁶

65. Reserve Bank of India, "Report on Trend and Progress of Banking in India", Reserve Bank of India Bulletin, Supplement, Vol.46, No.4, April, 1992, P.129.

66. Ibid., P.133.

The Credit Requirement and Supply in Kerala

Kerala has an area of 38,863 sq.Km. with a population of 30 million as per 1990 statistics.⁶⁷ The credit supply in Kerala was far ahead of those of other states in the country. The ACRC pointed out that the per hectare advances and outstandings by all the credit agencies were the highest in Kerala at Rs.3,864 per hectare. The unique feature of Kerala was the higher incidence of short-term loan and poor off-take of asset-generating term loans. In Kerala, crop loans were in the order of Rs.1,400 per hectare on an average, while in states like Tamil Nadu and Punjab, it was the other way round. It was in that context that the farm panel in Kerala looked to asset generating sectors like minor irrigation, fisheries etc. In minor irrigation, only 15 per cent of the ground water resources of the state had been tapped. According to calculations, there was scope to dig 12,000 wells which would provide adequate irrigation facilities to coconut and rubber cultivation. The small holdings in Kerala were a hindrance to adopting area-approach in land development. An initiative on the lines of Padasekharam Committees which would pool the resources of the community, was one of the means of stepping up the credit absorption level in the field.⁶⁸

In 1976 the National Commission on Agriculture (NCA) assessed the short, medium and long-term credit requirements for the year 1985, and projected the requirements for 1990, 1995 and 2000 for the various states. In Kerala the projected credit requirements for 1984-'85, 1990 and 1995 were Rs.419 crores, Rs.413 crores and Rs.586 crores respectively. It is estimated to be Rs.713 crores in 2000.

67. Reserve Bank of India, "Indian Economy - Basic Statistics", Reserve Bank of India Bulletin, Supplement, Vol.XLVI, No.12, December, 1992, P.7.

68. Nair,K.P.D., "Farm Panel May Adopt Area Approach", The IndianExpress, November 17, 1993, P.13.

The National Commission of Agriculture assessed the financial requirement for all crops in Kerala from 1985 - 2000, in which C_1 denotes Cash and Kind Expenditure and C_2 denotes Cash and Kind Expenditure plus imputed value of family labour. During 1984-'85 in Kerala C_1 was Rs.373 crores and C_2 was Rs.466 crores. During 1990 they were Rs.432 crores and Rs.540 crores respectively. During 1995 they were Rs.514 crores and Rs.642 crores respectively and during 2000 they are estimated to be Rs.625 crores and Rs.781 crores respectively.⁶⁹

The National Commission of Agriculture had also assessed the credit requirement and credit supply for crop production during 1984-'85. As per the study the credit supply in Kerala during the period was Rs.429 crores and the corresponding requirement was only Rs.419 crores. At the All India level it was Rs.3,490 crores and Rs.29,277 crores respectively. Thus the percentage of credit supply to requirement was 102 per cent in Kerala, whereas it was only 12 percent at the All India level. Kerala is the only state which supplies credit according to its requirements. In the crop-wise estimation of credit requirement, Kerala has a substantial amount under 'other crops'. Hence it was likely that the credit requirement is somewhat under-estimated. However, the credit supply in Kerala was better than in other states. In 10 other states except in Andhra Pradesh the credit supply does not exceed 20 per cent of the credit requirements. In eastern India in all the four states of Assam, West Bengal, Bihar and Orissa the credit supply was less than 5 per cent of the credit requirements. In northern India, Jammu-Kashmir and Himachal Pradesh had less than 5 per cent of credit supply compared to their requirements.⁷⁰ There was a more than average credit supply in Kerala but no development corresponding to it is

69. Desai, D.K., *Op.cit.*, P.341.

70. *Ibid.*, P.348.

seen. That must be due to the fact that viable projects were ignored or because there were no proper investment channels. So there is the need for giving a special emphasis on the qualitative aspect of credit in Kerala.

The state's agricultural sector was facing a serious set back, owing to the alarming diversion of credit by Primary Agricultural Credit Societies (PACS) to the non-farm sector. Even the credit available to agriculture had been by and large concentrated on crops like banana which account for low acreage under cultivation, that too, at the cost of paddy and coconut. In percentage terms the share of farm loans had come down from 66.48 in 1978-'80 to 42.3 in 1989-'90. The Planning Board's Agricultural Division expressed concern about the shift in rural co-operative credit and stated that the present trend in the co-operative sector was most likely to dash the hope of resuscitating the farm sector. The credit shift to the non-farm sector had been pronounced together with the fact that the credit made available to the agricultural sector itself was irrational. The Planning Board study had found that there had been no connection between the extent of coverage under each crop and the quantum of production credit disbursed to them. The reason for such skewed behaviour could be the attractive and enhanced rate of finance available in the name of the crop because of the highest scale of finance available to banana crop.⁷¹

Gulati, a noted Economist, pointed out that Kerala's low Credit-Deposit Ratio was a clear indication of the channelisation of money raised in the state and other states to extend credit to industrialists there. The banks attributed it to the absence of large-scale industries and viable projects capable of absorbing credit in

71. Menon Girish, "Alarming Credit Shift to Non-farm Sector by Co-operatives", The Indian Express, January, 18, 1993.

Kerala. Several industrial units, especially in the small-scale sector, were falling sick for want of adequate working capital. Banking circles admitted that funds mobilised in the state were being channelised to other parts of the country.⁷²

In the light of the data regarding the demand and supply position of credit in Kerala, it is quite refreshing to analyse the role of NABARD during the last 10 years. The analysis shows that the National Bank's refinance disbursements increased from Rs.22 crores in 1982-'83 (first year of its operations) to Rs.85 crores in 1990-'91 (the tenth year). In all, the refinance disbursement of Rs.560 crores in the past decade had helped in the capital formation of over Rs.827 crores in rural Kerala.⁷³

Regional Imbalances in Credit Supply

Studies based on the correlation between the index of agricultural development and credit supply showed that the institutional credit followed the contours of development. Although the present credit policies favour small and marginal farmers, the credit supply in 1984-'85 formed only 14.5 per cent of their credit requirements. The worst sufferers were the medium farmers who got only 5.24 per cent of their credit requirements, which include the cash and kind expenditure of crop production. The large farmers, in whose case the credit requirement was assessed to cover only 50 per cent of the cash and kind expenditure of crop production, got about 1/3 of their requirement.⁷⁴ A comparison of the percentage

72. Gulati, I.S., "States Credit-Deposit Ratio below 50 P.C.". The Hindu, January, 22, 1993.

73. NABARD, A Decade of Growth 1982-1992, Thiruvananthapuram, St. Joseph's Press, 1993, P.3.

74. Desai, D.K., Op.cit., PP.346-347.

distribution of credit supply and the area operated by different size group of holdings in 1981-'82 revealed that the small and marginal farmers holding 26.27 per cent of the total operated area obtained 42.65 per cent of short-term credit, whereas medium farmers holding 50.92 per cent of the operated area obtained only 24.4 per cent of the short-term credit.⁷⁵ It was true that the small and marginal farmers with landholdings of less than 2 hectares and operating about 25 per cent of the sown acreage, had received about 42 per cent of the total institutional credit. This, in all probability, was due to specific policies and concessionary conditions of credit offered by the banks and the government. At the other extreme, the larger farmers, with holdings of more than 4 hectares and commanding 52.6 per cent of the cropped area, also seem to have access to credit in a proportion larger than their acreage warrants. This was due to their influence, bigger asset-holding and greater dependence on hired labour. But it was the middle level farmers, with holdings between 2 to 4 hectares and commanding a larger percentage of the sown area, who seem to have little access to credit than warranted by their large hectarage. Except for the commercial banks, the ACRC were not satisfied with the quantitative real terms growth in rural banking, nor with their quality of performance.⁷⁶

The refinance disbursed by NABARD and the regional imbalances in it are studied below. Term credit disbursement of NABARD by way of refinance under schematic lending reached a new peak Rs.1,061 crore during 1984-'85 (July-June) registering an increase of 19 per cent over the previous year. The refinance disbursed by ARDC on June 30, 1969 was Rs 30.47 crores and it increased to Rs 5427.23 crores as on June 30, 1985, which was disbursed by NABARD. With the increasing amount of refinance for

75. Ibid., P.330.

76. Reserve Bank of India, The Report of the Agricultural Credit Review Committee, Op.cit., P.11.

schematic lending, the equitable disbursement of the amount, not only among different classes of farmers, but also among different regions of the country, was becoming a matter of concern for social scientists and planners. Analysis have revealed that the endogeneous factors like lower utilisation of refinance commitment from NABARD, relatively poor performance of SLDBs and low degree of diversification in the schemes financed are positively associated with low disbursement of refinance in some of the states.⁷⁷

In the initial period, minor irrigation claimed the lions share of NABARD's refinance accounting for about 2/3rds of total disbursements. With the extension of support to diverse schemes like farm mechanisation, storage and market yards, forestry, fisheries, dairy etc., the share of disbursement for minor irrigation gradually declined. The efforts of NABARD in the diversification of investment in agricultural development had not been allowed to reduce the share of farm-mechanisation, the benefits of which were mostly reaped by big and medium farmers.

In so far as the objective of reducing regional imbalance in rural development was concerned, the efforts of NABARD had met with only limited success. In 1982-'83, while the refinance disbursed by NABARD increased by 17 per cent, its assistance to north eastern states increased by only 11 per cent. NABARD has shown disinterest in the agricultural development of North-Eastern region mainly because of the poor credit absorption capacity, resulting mainly from inadequate infrastructure and weak credit delivery system.⁷⁸

77. Sangwan,S.S., "Agricultural Investment and Regional Imbalance: A Study of Refinance Disbursed by NABARD", Indian Journal of Agricultural Economics, Vol.41, No.4, October-December, 1986, PP.561-568.

78. "Regional Disparities Persist - AgriculturalCredit",Economic and Political Weekly, Vol.19, No.9, March 3, 1984, PP.370-371.

2. Review of :

(a) Rubber Plantation Development Scheme

Plantation crops play a very important role both for meeting domestic demand and for earning foreign exchange. The total GNP contribution of these crops was estimated at more than Rs.2000 crores per year. They also contribute over Rs.1000 crores to the country's foreign exchange earnings per year.⁷⁹ 'Hevea Brasiliensis' is the most important commercial source of natural rubber, a product of vital importance recovered from its latex. Rubber is a monocrop unlike other perennial crops and one which has perhaps the best institutional support among all the major crops in Kerala. This support includes financial incentives for planting and replanting and marketing of the output along with research and development activities for improving the varieties. However, the attractive private returns on rubber need not necessarily bring in equally attractive social returns. This was because the labour absorption was low compared to seasonal crops, and there was hardly any income generating type of processing of output let alone manufacturing taking place within the state.⁸⁰

The Service Area Plan estimates and past trend only indicated that banks were yet to get fully involved in the development of the sector which was the core activity and the mainstay of the rural economy.⁸¹

79. Kotaiah,P.(ed.), Technical Aspects of Agricultural Projects, Vol.II, Bombay, National Bank for Agriculture and Rural Development, 1990, P.159.

80. Kannan,K.P. and Pushpangadan,K., Dissecting Agricultural Stagnation in Kerala: An Analysis Across Crops, Seasons and Regions, Working Paper No.238, Centre for Development Studies, Thiruvananthapuram, August, 1990, P.27

81. NABARD, Potential Linked Credit Plan - Pathanamthitta District, 1991-'92, Pathanamthitta District Development Office, 1990, P.3.

Plantation/Horticulture was one of the purposes for which the erstwhile ARDC had extended refinance at the start, but even before ARDC came in to being, this purpose was being financed on a project basis by special development debentures subscribed by the Reserve Bank from the National Agricultural Credit , Long-Term Operations Fund.⁸²

The Rubber Board had been implementing various schemes from 1957 onwards for the expansion and modernisation of the rubber plantation industry in India. These were designed to meet the increasing demand for natural rubber in the country. The Rubber Plantation Development (RPD) scheme chalked out a project amalgamating all the programmes which were in existence for promoting new planting and replanting. This was implemented in three phases from 1980-'81 onwards to increase production of natural rubber by accelerating the pace of new planting and replanting on modern scientific lines. This was proposed to be achieved by rendering financial, technical and material assistance to all categories of growers. The RPD scheme phase II was also implemented for five years from 1980-'81 to 1984-'85.⁸³

Plantation Insurance is obligatory during the immaturity period. Free advisory and extension support at all stages of planting, maintenance, tapping and processing of the crop will be extended by the Board to all growers. It is a credit linked scheme financed by the NABARD. Long term loan is available to meet the whole development cost. Interest subsidy at 3 per cent available for previous schemes were withdrawn. During December 1988,

82. NABARD, Manual For Appraisal of Agricultural and Rural Development Projects, Bombay, NABARD Head Office, Chapter VII, 1986, P.203.

83. Nair Narayanan, P.N. et. al.(ed.), The Rubber Grower's Companion, The Rubber Board, Kottayam, 1995, P.73

M/S National Insurance Company Limited implemented a plantation insurance scheme for rubber through the Rubber Board. The scheme originally covered only rubber plantations raised during 1988 under the Board's Rubber Plantation Development Scheme. From June 1989 onwards all mature plantations up to 22 years of age were also brought under coverage of the scheme. The insurance certificates are issued through the Rubber Board Regional Offices.⁸⁴

To increase the efficiency of the RPD scheme and to avoid many of its infirmities in areas where beneficiaries were below the poverty line, a group planting project is being implemented, which involves raising of community nurseries by the Board in a village where a cluster of growers are available.⁸⁵

Among the North Eastern States, Tripura pioneered the development of rubber plantation. A study conducted in Tripura gives an idea of the Rubber Plantation of small holdings. The study conducted by the Rubber Research Institute of India documented the historical background of the agricultural system of Tripura and the introduction and development of natural rubber with special reference to the small holding sector. The study used both primary and secondary information.⁸⁶

The New Planting Development Scheme of 1979 and the Rubber Plantation Development Scheme of 1980 paved the way for small growers to take up rubber cultivation in Tripura. However, the growth of the small holding sector was insignificant during the phase I period of the RPD scheme. The share of holdings in rubber area for

84. Ibid., P.76.

85. Ibid., P.84.

86. Joseph Toms and Rajasekharan P., "Status Report on the Rubber Small Holdings of Tripura", Rubber Board Bulletin, Vol.26, No.4, April-June, 1991, P.16.

the period after the implementation of the project was 51.6 per cent, while before its implementation it was only 15.2 per cent. Since the implementation of the project more and more holdings with lower size were planted with rubber. Most of the small growers who had especially cultivated rubber during the reporting period had land area below 2 hectares and they were mostly peasant farmers with subsistence farming or petty business. Relatively large growers emerged from the business community.⁸⁷

Most of the small growers in North East especially those who had planted in recent years, were financially handicapped. They could not undertake any farm activity without outside financial help. Hence Rubber Board channelised more funds per unit area in the North East compared to traditional area.⁸⁸

The subsidy disbursement details depicted the situation of the rubber small holdings of Tripura. Most of the holdings as suggested in the inspection reports were found to be in an advanced stage or the existing stand was considerably lower than the stipulated one. The cases in Tripura revealed that if scientific management and cultural practices were followed, rubber plantation in Tripura would have the same potential to grow and yield as in the traditional ones.⁸⁹

The study proved that the small growers used only limited quantities of fertilisers. Instead they applied cowdung twice or more depending upon its own farm availability.⁹⁰ The study showed that the share of labour in the total cost was 66 per cent. The share of market labour comes to around 60 per cent of the labour use.

87. Ibid., PP. 17-18.

88. Ibid., P.18.

89. Ibid., P.19.

90. Ibid., P.20.

The growers with lower size holdings, who depend completely on family labour, did not maintain the farm properly and hence the volume of labour inputs was insignificant compared to growers with larger area under plantation who depended mainly on hired labour. The share of female labour was negligible. In the case of tapping, the study proved that in most cases tapping was done in an unscientific manner.

The processing of rubber in Tripura by small growers was as unscientific as tapping and hence the sheet rubber produced was of an inferior quality.⁹¹

The marketing channel of small growers outlined that there was near monopoly in the market in Tripura where one big dealer of Agarthala controlled the entire market.⁹² Since planting was done by small growers at the behest of Rubber Board, all of them who had valid land documents availed subsidy. Around half of the sample growers had availed bank loans. It is a paradox that it is the group of traditional growers that availed the minimum amount of bank loan. The study showed that due to lower levels of demand for credit, manufacturers would take years to open selling points in Tripura. The Rubber Board has evolved schemes to provide plantation requisites through its offices with subsidy element. But the supply is often lagged and its volume does not correspond to demand.⁹³

Kerala stands first in respect of the disbursement of refinance under Plantation / Horticulture sector in the country with an average

91. Ibid., P.21

92. Ibid., P.22

93. Ibid., P.23

share of about 25 per cent.⁹⁴ A review of the sector-wise progress during June 1992 revealed that against the targetted disbursement of Rs.736.262 lakhs under PH schemes, the actual disbursement was only Rs.463.863 lakhs, forming 63 per cent of progress in Pathanamthitta district. The percentage of drawal of refinance against the commitment under Plantation/Horticulture was 61.17 per cent. The geographical spread of schemes was good by spreading the schemes in all the blocks depending upon the potential of the locality.⁹⁵

The evaluation study on investments in rubber plantations in Kottayam district observed that commencement of tapping and yield stabilisation at eighth and fifteenth year respectively of planting confirmed to the appraisal expectations. The study revealed that the per acre average yield of rubber latex and shells at 786 Kgs. realised by the sample beneficiaries was well above the per acre yield of 600 Kgs. assumed in the appraisal of the scheme. The per acre average yield obtained by the sample beneficiaries was marginally lower than the per acre yield of 800 Kgs. expected by the Rubber Board under ideal conditions. Better use of input package and improved tapping methods contributed to relatively higher productivity. The repayment performance of the sample beneficiaries was excellent, as at the end of June 1989 they had no dues at all.⁹⁶

The major share of credit flow in Ernakulam district under agricultural term loans were for Plantation/Horticulture schemes. The

94. Hegde, R.N., et al., Status Paper on Plantation/ Horticulture Development in Kerala For Nineth Anual Business Meet 1993, Thiruvananthapuram, Technical Services Department, Plantation/ Horticulure Discipline, NABARD, 1993, P.1.

95. NABARD, District Oriented Monitoring Study in Pathanamthitta District, Thiruvananthapuram Nabard Regional Office, July 1992, P.5.

96. NABARD, Annual Report 1991-'92, Bombay, Department of Economic Analysis and Research, July 1992, P.129.

area under rubber had increased from 19,856 hectares in 1973-'74 to 63,406 hectares in 1991-'92 with an average annual increase of about 2,350 hectares. There was a well organised marketing system for rubber through rubber marketing societies. The World Bank had recently sanctioned a scheme for rubber plantation and rubber based industries.⁹⁷

In Ernakulam District the investment-wise details of NABARD assisted ongoing scheme as on 30th September 1992 indicated that the number of schemes sanctioned under Plantation/Horticulture was 80, the refinance commitment up to 31.03.1994 was Rs. 707.189 lakhs, the percentage of commitment to total was Rs.63 per cent, the refinance drawn as on 30.09.'92 was Rs.391.642 lakhs, the percentage of drawal to total was 70, the gap in drawal of refinance was Rs.315.547 lakhs and the percentage of gap to commitments was 44.⁹⁸

The implementation of the scheme in Ernakulam proved that the unit cost was reported to be adequate and that the stipulated plant density was maintained. As far as the availability of extension services and marketing were concerned, the services rendered by the Rubber Board were extensive and no problem was reported with regard to the availability of extension services.⁹⁹

Institutional credit had played a vital role in Palakkad district. The ground level credit disbursed for investment in the farm sector had tremendously increased. This was accompanied by

97. NABARD, District Oriented Monitoring Study in Ernakulam District, Thiruvananthapuram, NABARD Regional Office, January, 1994, PP.24-25.

98. Ibid., P.33.

99. Ibid., P.51.

a corresponding increase in the flow of refinance from National Bank. The important sectors that benefited from refinance support were mainly minor irrigation, development of plantation and horticultural crops (like rubber and coconut) and farm mechanisation.¹⁰⁰

A shift in the cropping pattern from traditional crops like paddy to plantation crops like rubber, coconut, pepper etc. was observed in the district.¹⁰¹ The rubber plantations financed by Palakkad District Co-operative Bank were growing examples of effective utilisation of credit. All the cultivators had planted high yielding varieties of rubber with recommended spacing and plant density and the plantations were monitored excellently.¹⁰² All the beneficiaries financed were registered with the Rubber Board. Due to effective follow-up by the Rubber Board, the quality of investments financed was of high standard.¹⁰³

In the case of loans under Rubber Plantation Development Scheme release of subsequent instalments was reportedly held up due to non-receipt of Utilisation Certificate issued by the Rubber Board. Timely issue of Utilisation Certificate by the Rubber Board was necessary to ensure release of loan instalments by banks well in time for taking up farm operation.¹⁰⁴

The World Bank - assisted massive rubber plantation programme of Rs.450 crores, having a credit component of Rs.123 crores, was under implementation in the country. The major part

100. NABARD, District Oriented Monitoring Study in Palakkad District, Thiruvananthapuram, NABARD Regional Office, December, 1992, P.11.

101. Ibid., P.13.

102. Ibid., P.24.

103. Ibid., P.4.

104. Canara Bank, District Credit Plan 1995-'96, Palakkad District, Palakkad Lead Bank Office, 1996, P.21.

of the physical programmes was envisaged to be implemented in the state.¹⁰⁵

World Bank had recently sanctioned a scheme for Rubber plantation and Rubber based industries. Taking all the factors into consideration, a programme of 600 hectares was envisaged for the year 1993-'94, of which 450 hectares was estimated to be under replantation.¹⁰⁶

Bank credit was also provided for certain supporting activities like rubber nurseries, smoke houses, driers and rubber rollers.¹⁰⁷ The estimated programmes by the Rubber Board for 1994-'95 in Palakkad was 600 hectares of new planting and 700 hectares of replanting. As per the general indications 75 per cent of the new planting and 30-40 per cent of the replanting programmes of the Rubber Board were supported with bank credit.¹⁰⁸

A Rubber Development Project prepared by the Rubber Board for development of one lakh hectares of rubber plantations in Kerala, Tamil Nadu, Tripura and a few other states and establishment of 100 rubber processing plants in the country was sent to the World Bank for assistance. The duration of implementation of the project stretches for a period of five years between 1992-'97. The World Bank Pre-Appraisal Mission had estimated the total project cost including contingencies at US \$ 162 million. The foreign exchange component

105. NABARD, State Credit Plan, 1994-'95, Thiruvananthapuram, NABARD Regional Office, DDPD Section, 1995, PP.32-33.

106. NABARD, Potential Linked Credit Plan, Ernakulam District, 1994-'95, District Development Office, September, 1993, P.14.

107. NABARD, Potential Linked Credit Plan, Palakkad District, 1993-'94, District Development Office, 1992, PP.28-29.

108. NABARD, Potential Linked Credit Plan, Palakkad District 1994-'95, District Development Office, September 1993, P.16.

is estimated at US \$ 17 million. The proposed loan of US \$ 97 million would finance 60 per cent of the total cost of the project. The World Bank had sought National Bank's confirmation for refinancing the credit component under the project, pending formal commitment from World Bank for reimbursing to National Bank its refinance disbursements to participating banks under the project.¹⁰⁹

Review of :

(b) The Minor Irrigation Scheme

A few studies are available about the impact of minor irrigation loans on the small and marginal farmers. As observed by Pal,¹¹⁰ in India, several researchers have touched upon different aspects of how irrigation may contribute to agricultural production. A set of studies have analysed the impact of irrigation on cropping intensity and hence on agricultural production. Some studies have also discussed the role of irrigation in bringing about changes in cropping pattern and stability in agricultural production.

The National Bank has been providing refinance support for a wide variety of minor irrigation investments like dugwells, pumpsets, borewells, shallow tube wells, deep tubewells river lifts etc. In the hard -rock areas financing has generally been for dugwells, borewells, dug cum borewells and deepening of wells, whereas shallow and medium tube wells have been the chief minor irrigation investments financed in the Gangetic Plains in the north and the deltaic regions of the east.

109. NABARD, Annual Report 1991-'92, Op.cit., P.169, 1992, P.169.

110. Pal,S.P., Contribution of Irrigation to Agricultural Production and Productivity, New Delhi, National Council of Applied Economic Research (NCAER), 1985, P.3.

With restricted availability of diesel and the attendant problems of distribution in the rural areas, it has been realized that diesel operated irrigation is not as cost effective as electrically operated pumpsets. While this has given rise to a spurt in the demand for electric pumpsets, a major constraint in meeting the increased demand has been the inadequate power supply in many states. Considerable delays are experienced in the energisation of wells. To tackle this problem effectively, the National Bank has been implementing two special refinance schemes, i.e. the scheme for loans to State Electricity Boards and the Special Projects Agriculture Schemes.¹¹¹ Another important area where the National Bank has made efforts in the interest of ensuring efficient use of resources is the development and use of pumping devices which minimise operating costs, conserve energy and operate at higher efficiency. Studies conducted in selected parts of Andhra Pradesh, Bihar, Maharashtra, Punjab, Rajasthan and Uttar Pradesh had revealed that the irrigation equipment used by the farmers had not got the best advantage out of the pumpsets installed. The National Bank also participated in such efforts by providing assistance from its Research and Development (R & D) fund. The bank had also decided that supplementary finance may be provided upto a maximum of Rs.1,500/- per pumpset for replacement of undersized/defective pumping systems and foot valves and carrying out the necessary correction to the installations and for rectifying other defects in the existing pumpsets.¹¹²

A study conducted in Muzaffarnagar district of Uttar Pradesh showed that shallow tubewells with diesel pumpsets generated on an average an incremental income of Rs.3,987/-, as against Rs.8,927/- by the shallow tubewells with electric pumpsets. The beneficiaries of

111. NABARD, Annual Report 1986-'87, Bombay, Department of Economic Analysis and Research, October 1987, P.27.

112. Ibid., P.28.

electric pumpsets could derive higher benefits than those using diesel engines by utilising the electric motors for crushing sugarcane which resulted in additional benefits.¹¹³

The evaluation of minor irrigation schemes implemented in Jhansi district of Uttar Pradesh showed that the average loan amount of the sample beneficiaries in the case of masonry well with traditional lift as well as pumpset covered less than 50 per cent of the actual cost of investment. The net benefited area per unit of investment in dugwell with pumpset ranged between 3.29 acres in Chittoor (Andhra Pradesh) to 6.65 acres in Narsinghpur (Madhya Pradesh).¹¹⁴

All the minor irrigation investments except in deep tubewells were found to be financially viable. Capital-output ratio however, ranged from 1.50 in the case of dugwells with pumpset in Maharashtra to 5.04 for dugwells with traditional lift in Jhansi district of Uttar Pradesh. This indicates that the latter kind of investment is the most inefficient among different types of minor irrigation investments evaluated. Investments in minor irrigation structures had provided significant benefits in the form of increased production of food grains and cash crops and additional employment. Investments in dugwells and pumpsets generated average annual additional employment of 73 mandays per unit in Maharashtra, 145 mandays in Bihar and 176 mandays in Uttar Pradesh. In case of tubewells and lift irrigation units, additional employment generation was of a larger order.¹¹⁵

113. NABARD, Annual Report, 1985-'86, Department of Economic Analysis and Research, Bombay, 1986, P.71.

114. NABARD, Annual Report, 1987-'88 Department of Economic Analysis and Research, Bombay, October 1988, P.132.

115. *Ibid.*, P.133.

Kulkarni analysed the returns to investment in minor irrigation by selecting four small farmers and 11 big farmers in Kolhapur district who have borrowed from ARDC Credit Project II of the Maharashtra Land Development Bank to dig wells and to install pumpsets. He found that only 73 per cent of the total cost was met out of the loan amount. The cropping intensity had increased after the scheme was taken up. As far as the cropping pattern was concerned, a wide difference between expected and actual positions of the selected farmers was observed.¹¹⁶

Evaluation studies designed to assess the impact of investments financed under various schemes in terms of increased income, production and employment were undertaken on a selective basis as a continuing activity by the National Bank and Commercial Banks.¹¹⁷ The data presented relate to evaluation of a minor irrigation scheme for financing of new dugwells, deepening of existing wells and installation of diesel and electric pumpsets on pre-existing wells in Udaipur district of Rajasthan. Ninety seven per cent of the borrowers financed under the scheme were small farmers and almost all of them were tribals.¹¹⁸ Minor irrigation studies completed in different states showed a high level of small farmers' participation (72 to 100 per cent) under the subject schemes. On an average, the benefited area per dugwell fitted with a pumpset was around 2.5 acres. However, in the case of 25 per cent of the sample farms in Tamil Nadu, the benefited area was so small that the rate of return was found to be lower than the threshold cut off level of 15 per cent.¹¹⁹ In the case of dugwells with pumpsets, higher

116. Kulkarni, B.N., A study on Returns from Investment in Minor Irrigation, Bombay, National Co-operative Land Development Banks Federation (NCLDBF) Ltd., 1981.

117. NABARD, Annual Report, 1988-'89, Bombay, Department of Economic Analysis and Research, 1989, P.85.

118. Ibid., P.87.

119. NABARD, Annual Report, 1989-'90, Bombay, Department of Economic Analysis and Research, 1990, PP.98-100.

incremental income of Rs.5,832 was realised by the beneficiaries of the scheme mainly due to the reason that the sample beneficiaries had adopted superior cropping pattern which included paddy, groundnut and chillies. The studies revealed that the investment in minor irrigation structures, viz, dugwells with pumpsets and tubewells were found to be viable with financial rates of return varying between 14 and 36 per cent across different scheme areas.¹²⁰

Prasad¹²¹ conducted a post utilisation study on the advances of minor irrigation by a PLDB operating in Channapatna taluk of Bangalore district of Karnataka during 1980. The sample was drawn from six villages of the taluka covering 15 small and 15 big farmers who had borrowed loans from the PLDB to dig new wells. By comparing the post loan situation with that of the pre - loan situation of the same farm, the study found distinct changes in the cropping pattern after the well was sunk by the selected farmers. The pre- loan per acre average net income of small farmers was Rs.370/- and this increased to Rs.2,152/- during the post loan period. The corresponding figures for big farmers were found lower at Rs.308/- and Rs.1,056/- respectively.

Disproportionately high investment in irrigation projects has been an important aspect of Kerala's planned efforts for agricultural development. An analysis of the impact of irrigation in stabilising and increasing the yields of paddy crop was undertaken. The data on yields used for the analysis are taken from the crop cutting surveys conducted by the Directorate of Economics and Statistics. In order to carry out the analysis at the micro level, taluks were grouped into agro-climatic zones. The study concludes that irrigation has some impact on stabilising and improving yields during

120. Ibid., P.101.

121. Prasad, JVL, A Post-Utilisation Study on the Advances to Minor Irrigation by Land Development Banks, Bombay, NCLDBF, 1981.

the autumn crop. As regards the impact of irrigation on stabilising or improving yields of winter and summer crops, no valid conclusions could be drawn.¹²²

The minor irrigation scheme taken up for evaluation by NABARD was the one sanctioned to Kerala Co-operative Central Land Mortgage Bank (KCCLMB) in 1969 for the construction of 500 new wells, renovation of 700 old wells and installation of 550 pumpsets in Chittoor and Palakkad taluks of Palakkad district. The scheme had an achievement of about 68% of the financial target. Considering the average actual cost incurred by the scheme beneficiaries, the unit costs approved under the scheme for different items for investment were generally inadequate. The average amount of loans disbursed to sample borrowers for different categories of investment was even less than the approved unit costs. There was also considerable delay in the sanction and disbursement of loans. The average time lag between sanction and disbursement of the loan was about two months. It was envisaged under the scheme that the dugwells to be financed should be constructed upto a depth of 35 ft. The study, however, revealed that in the case of new wells, only eight of the 50 sample beneficiaries had dug their wells to the required depth. In other cases the depth varied from 25 ft. to less than 35 ft. Non adherence to the prescribed depth had adversely affected the discharge from wells. The investments in minor irrigation works financed under the scheme resulted in improvements in cropping pattern, cropping intensity, productivity, income and farm employment. The total area benefited by the scheme investments came to 2,390 acres. The gross value of

122. Narayana,D. and Nair,Narayanan K., "Linking Irrigation with Development, The Kerala Experience", Economic and Political Weekly, Vol.18, No.45 and 46, November, 1983, PP.1935-1937.

incremental income due to the project works out at Rs.71.74 lakhs in 1980-'81 prices.¹²³ The scheme resulted in the net contribution to G.D.P. of Rs.40.73 lakhs. The scheme was estimated to have generated non-recurring employment of the order of 6.34 lakhs mandays. In addition, the scheme investments had created additional recurring employment of 1.92 lakhs mandays per annum, of which the share of hired agricultural labour was estimated at 1.47 lakhs mandays. Repayment performance of the sample beneficiaries was not satisfactory during the initial years, but later on it improved significantly. During the first year, the overdues ranged between 27% and 41% of the demand but had come down in the subsequent years. During the reference year, the overdues formed only 16% of the demand for the sample beneficiaries. Higher level of overdues during the initial years was mainly due to the delay in switching over to high value crops by the scheme beneficiaries.¹²⁴ The study underlines the need for so fixing the due dates for repayment of loan instalments as to coincide with the peak marketing season of sugarcane, the important commercial crop grown in the area.¹²⁵

A review of sector-wise progress during June 1992 in Pathanamthitta district by NABARD revealed that the percentage of drawal of refinance against the commitment under minor irrigation was 22.2. The percentage of physical progress achieved under minor irrigation was 72.37.¹²⁶

As per the study in Ernakulam district, all the beneficiaries financed by the District Co-operative Bank belonged to the category of 'small farmers', whereas in respect of the Co-operative Agriculture

123. NABARD, Dugwell Irrigation in Palakkad District - Kerala, An Ex-post Evaluation Study, Evaluation Study Series, No:22, Bombay, Economic Analysis and Publication Department, 1986, PP.1-3.

124. Ibid., P.4.

125. Ibid., P.5.

126. NABARD, District Oriented Monitoring Study in Pathanamthitta District, 1992, Op.cit., P.3.

and Rural Development Bank (CARDB) and SBT, the share of 'small farmers' was 90% and 91% respectively.¹²⁷ Violations in the diameter of the suction and delivery pipes, financing of non-ISI mark pumpsets, and delays in getting power connection were observed in respect of minor irrigation investments in Ernakulam district.¹²⁸

The overall achievement was only 40.4 in terms of the disbursement of bank loan under Minor Irrigation Sector in Palakkad district and 43 per cent in terms of the drawal of refinance. Among the agencies KSCARDB had made excellent progress (82.3 per cent) while the progress registered by Commercial Banks (23.4 per cent) and KSCB (26.3 per cent) were unsatisfactory. The study showed that despite the excellent potential existing in Palakkad district the above two agencies did not show much interest in disbursing for minor irrigation.¹²⁹ Under minor irrigation investments financed by the Kerala State Co-operative Agriculture and Rural Development Bank (KSCARDB), Palakkad District Co-operative Bank Ltd. and Indian Overseas Bank, most of the farmers were using the irrigation wells for supplementary irrigation of paddy. In the case of paddy irrigation had stabilized the yield of paddy and helped the farmers to tide over the difficulties of the dry months.¹³⁰

The Loan Repayment Aspect :-

A large number of studies and reports are available about the loan repayment problems of farmers who have borrowed from Co-operatives, Commercial Banks and Land Development Banks. A few

127. NABARD, District Oriented Monitoring Study in Ernakulam District, 1994, Op.cit., P.41.

128. Ibid., P.2.

129. NABARD, District Oriented Monitoring Study in Palakkad District, 1992, Op.cit., P.34.

130. Ibid., P.65.

relevant studies are reviewed in the context of the present study.

One of the most serious lacunae that has crept in the horizon of rural banking is growing delinquency in the repayment of agricultural credit. Without going into the conceptual and methodological issues relating to calculation of overdues and the minor difference that it would make in the overall picture, there could be no two opinions about the enormity of the problem of agricultural overdue. For the past several years, more than half of the direct loans falling due for repayment were not repaid. Data presented in the Reserve Bank's Annual Report for the year 1984-'85 reveal that recovery of agricultural advances by public sector banks at the end of June 1983 stood at 53.2 per cent, which further declined to 51.6 per cent by the end of June 1984. The data also indicate wide inter state disparities in the recovery of agricultural loans. At the end of June 1983, the recovery ratio was as low as 28.3 per cent in West Bengal and 38.8 per cent each in Orissa and Bihar, in contrast with the high recovery of 74.1 per cent and 65.9 per cent in Punjab and Kerala respectively.¹³¹

The Eligibility Criteria for banks to avail refinance from NABARD is linked with their recovery performance. Availing of World Bank assistance by NABARD also has bearing on recovery performance of banks. All in all, poor recovery dries up loanable resources of banks and in the process slows down the flow of credit to the rural sector which is quite inconsistent with the concept of development banking.¹³²

Starting from the study by Datey Committee relating to co-operative overdues more than a decade back, several useful studies

131. Roy, A.K., "Tackling the Problem of Overdues of Agricultural Loans", Agricultural Banker, Vol.9, No.4, October-December, 1986, P.3.

132. Ibid., P.4.

have been made to identify the factors responsible for the poor recovery of loans and suggest measures to rectify the deficiency. The studies conducted by CALCOB (Committee on Agricultural Lendings by Commercial Banks) have identified number of factors which have given rise to high level of overdues in most of the branches covered by the study. These factors fall into two broad categories, viz, internal and external. The internal factors are those which the concerned bank/branch is responsible by way of faulty system followed in identification of borrowers, deficiencies in the processing of loan applications, lending policies, disbursement procedures and supervision of the end-use of credit. Other factors such as wilful default, natural calamity, infructuous investment, which are beyond the control of the bank are considered to be external factors. The most interesting feature of the study was that external factors contributed to 53 per cent of overdues, of which wilful default accounted for as much as 42 per cent.¹³³

According to the studies conducted by NABARD in the states of Bihar, Gujarat, Haryana, Karnataka, Kerala, Maharashtra, Punjab, Tamil Nadu and West Bengal mainly to identify the factors behind glaring disparities in recovery performance amongst different states, it was revealed that from the supply side, the deficiencies in the lending and recovery procedures of the lending institutions, such as lack of rescheduling demand in years of natural calamities, absence of initial grace period, shorter loan maturities, foreclosure of loan and treating the entire loan amount as demand in one year in the event of infructuous investment and misutilisation of loan and misclassification of small farmers are partly responsible for overdues. The demand side studies reveal that the level of overdues is higher for investment credit than for crop loans. It was also interesting to note that large farmers defaulted more than the small farmers. NABARD

133. Ibid.

studies suggest that the size of income alone is not a sufficient condition for good repayment performance. The will to repay the loan is equally important.¹³⁴ Banks have yet to find real solution to the problem of wilful defaults for which even legal action does not seem to be adequate and effective. An expensive and time consuming recovery process through legal measures does not appear to be conducive to mass banking.¹³⁵ In view of the magnitude of the problem and its far-reaching consequences, the Reserve Bank has advised banks to pursue with the concerned state government the question of launching recovery drives and at the same time take effective measures to ensure that defaults are brought down to the minimum. Apart from the need for strengthening and gearing the organisational structure at the controlling offices and field levels, adopting a schematic approach to lending and toning up pre-lending appraisal systems and post-lending supervision techniques involving constant contact with beneficiaries, certain guidelines have been recommended by the Reserve Bank which the banks may follow for improving their recovery performance. The guidelines, inter-alia, provide that scale of finance must be in consonance with the scale of inputs and cost of assets vis-a-vis incremental income. Loans should be disbursed promptly and in time, as far as possible in the form of direct payment to suppliers.¹³⁶

The problem of recovery of agricultural loans cannot be viewed in an isolated manner. Recovery is largely dependent on the success of the project financed, which, in turn, is dependent on other factors such as infrastructure, technology, extension services etc. Noted agricultural scientist, Dr.M.S. Swaminathan has recently suggested the revamping of entire agricultural extension service of

134. Ibid., PP.4-5

135. Ibid., P.5.

136. Ibid., P.6.

the country. In view of the massive efforts being made to accelerate the pace of rural development and implement poverty alleviation programmes in rural areas, serious attempt should be made to make available the necessary technology and infrastructure to the rural poor.¹³⁷ Repayment ethics form an integral part of the principle of development banking. There is every need to disseminate this message among the rural community. With this end in view, NABARD has made some efforts in this direction on a pilot basis through what is known as the Voluntary Vikas Vahini.¹³⁸

It has been reported in the monitoring studies that borrowers were under-financed or their repayment schedules were unrealistically shortened. The important point is that the farmers' confidence in the bankers concern for his well-being should get strengthened and a relationship of mutual trust should develop.¹³⁹ There is place for a discriminating accommodation in the repayment periodicity. While we highlight overdues, we tend to forget that there may be valid economic reasons for the delay in repayment. Studies have shown that a little more accommodation can reduce the percentage of overdues significantly. The bankers' recent studies on rural lending have revealed that often defaults continue under the impression that even if they are cleared, fresh loans will not be given. Surely, bankers should remove such impression by liberally extending "due" dates in deserving cases.¹⁴⁰ In view of the existence of chronic overdue problem of loans in Madhya Pradesh, a list of defaulter borrowers from total borrowers were listed out from the period of 1974-'75 to 1979-'80. A sample of 100 defaulters was randomly selected in proportion to the number of defaulters falling in each purpose. The sample defaulters selected from crop loan were

137. Ibid., P.8.

138. Ibid., P.9.

139. Nayak,P.R., "Financing Agriculture : Specific Emphasis on Recoveries", Agricultural Banker, Vol.II, No.2, April-June, 1988, P.1.

140. Ibid., P.3.

32 and 68 from term loans. The selected defaulters were further grouped according to the size of their holding i.e. small, medium and large. The information was collected through survey method during 1982-'83. It was noted that sample farmers had 54.63 per cent of the amount overdue of which 6.95 per cent was in case of small farmers to 21.22 per cent in the case of large farmers, and medium farmers had an overdue of 26.46 per cent.¹⁴¹

Pointing to the growing political clout of the farmers' organisations, it is agreed that the rural banking system has been misused to provide subsidies and easy money for those who belong to this class. Overdues to the banks are only a symptom of this basic malaise. A.S. Kahlon initiated a debate on this important issue within the narrow framework of the existing financial system. The main argument of this paper was that the loan policies and procedures of lending institutions have impaired the borrowers' ability to secure adequate incremental returns to enable them to repay their loans. Consequently, the overdues have been mounting. However, for any attempt to examine the problem of overdues from within the existing system, among other things, it is essential to consider not only the perception of borrowers, but also the perceptions of bankers and other relevant issues. The points that need to be raised here relate to the reasons for such deviation from norms. The reasons might have been rooted in the day-to-day field problems of the bankers.¹⁴²

There is a significant change in the nature of overdues during the 1980s. While many of the overdues of the early 1980s

141. Mishra, R.S., Awasthi, P.K. and Jain, R.K. "Non Repayment of Farm Loans: Farmer's Perception". Agricultural Banker, Vol.9, No.2, April-June, 1986, PP.27-28.

142. Rajasekhar, D. and Suvarchala, G., "Institutional Credit and Overdues", Economic and Political Weekly, Vol.26, No.30, July 27, 1991, P.1819.

were on account of non-wilful defaults, those in the late 1980s were essentially the result of wilful defaults. The level and growth of overdues amount held by wilful defaulters had rapidly increased during the period 1984-'85 to 1988-'89. This statement is further corroborated by the evidence provided by the Khusro Committee's "Review of Agricultural Credit System in India" The committee, in order to ascertain the borrowers perceptions of the causality of defaults, interviewed 1,013 defaulters across different types of credit agencies. The study shows that crop failure due to adverse weather conditions and inadequate income generation from the activities for which loans were sanctioned were important reasons contributing to the problem of overdues. Only a small proportion of defaulters cited the defective lending policies such as very high repayment instalment amounts, unsuitable repayment schedules and high interest rates as the causes for overdues.¹⁴³

Non-repayment of farm loans by the borrowers not only chokes the flow of finance and restricts recycling of funds, but also results in stagnation of the rural economy in as much as it retards the growth in production and farm income. The national average of recovery of farm loans in respect of commercial banks is 56.5% against the demand which poses a threat to recycling of funds besides the possible danger vitiating recovery atmosphere. The commercial banks equipped with technical manpower have not been able to arrest the growing trend of overdues. The experience in lending to farm sector and the result of experiments conducted by Syndicate Bank have proved that when scientific and professional approach has been complemented with human approach the recoveries improved considerably and only scientific and professional approach have not been of much help.¹⁴⁴

143. Ibid.

144. Udupa, K.M. and Dinkar Rao, "Strategy for Recovery of Farm Loans - An Experience of Syndicate Bank", Agricultural Banker, Vol.II, No.4, October-December, 1988, PP.1-2

Most evaluation as also the District Oriented Monitoring (DOM) studies conducted by the NABARD have shown that such factors as under-financing resulting from the fixation of low unit cost or sanctioning of inadequate loan amounts by the banks have largely contributed to the rising level of overdues by the farmers. About 60 evaluation studies conducted by NABARD and commercial banks have revealed that more than 50 per cent of the borrowers under any scheme were under-financed. As a result of this high level of under-financing, the beneficiaries were either forced to raise resources for meeting the difference in actual cost and the loan amount from informal agencies at a much higher rate of interest or they had to settle for assets of poor quality.¹⁴⁵

The problem of mounting overdues in the agricultural sector has been discussed by several committees and research workers, but more often from the perspective of the financial institutions than from the borrowers angle. In the ultimate analysis, the financial health of the rural financial institutions depends on the success of the rural borrowers.¹⁴⁶

During the field survey involving interviews of defaulters of different credit agencies, it was found that 22.6 per cent of the respondents attributed their defaults to natural calamities and adverse weather conditions; 17.1 per cent respondents to low income generation; 3.9 per cent respondents to unforeseen developments, 2.3 per cent respondents to diversion of loans and one per cent of respondents to defective loan policy. Fifty four per cent respondents did not indicate any specific reason for their defaults, some of which

145. Kahlon,A.S., "Institutional Credit and Overdues - Borrower's Angle", Economic and Political Weekly, Vol.26, No.5, February, 1991, P.245.

146. Dr.Kuchhaditya,D.B. and Shiyam,R.L., "A Retrospection in Overdues of Regional Rural Banks", Agricultural Banker, Vol.II, No.4, October-December, 1988, P.5.

would be cases of wilful defaults.¹⁴⁷

The recovery figures for SLDBs have been hovering around 50 per cent over the last five years. In 1992-'93, the figures stood at 51.6 per cent. For State Co-operative Banks the rate shows a sharp downward trend from 48.13 per cent in 1988-'89 to 27.3 per cent in 1991-'92.¹⁴⁸

The question of priority sector credit has been under discussion for quite some time. It is often erroneously argued that the problem of commercial banks has been the large priority sector credit, which apart from involving high cost of servicing is afflicted by poor recovery. There is little evidence to show that recovery is any better in the case of larger loans than smaller loans. A basic pre-requisite for a successful financial sector reform is that the rural credit delivery system, which has developed serious problems in the recent past is revamped and an enduring institutional structure substituted.¹⁴⁹

The RBI's Study Team on overdues (1974) had come to the conclusion that defaults were, by and large, wilful and that lack of will and discipline among cultivators to repay and the unhelpful attitude of state governments in creating a favourable climate for recovery were the primary factors responsible for the prevalence of overdues. It had observed that there was no positive relationship between the level of overdues and the extent and frequency of natural calamities. It, therefore, recommended that state

147. Khusro, A.M., "A Review of the Agricultural Credit System in India: Report of the Agricultural Credit Review Committee", Indian Journal of Agricultural Economics, Vol.47, No.2, April-June, 1992, P.287.

148. Manali, Reshamwala, "Pennywise, Pound Foolish - Agricultural Credit", The Economic Times, January 6, 1994, P.7.

149. Tarapore, S.S., "Issues in Commercial Banking Reform", Reserve Bank of India Bulletin, Supplement, Vol.XLVII, No.1, January 1993, P.25.

governments should not condone wilful non-repayment and that coercive steps should be instituted for recovery of overdues.¹⁵⁰

Loans for installing pumpsets and digging wells also showed a commendable recovery. Land development loan marked good recovery in 1981, but it declined in the years that followed. The recovery of plantation loans was 100 per cent in 1980, but declined to 64 per cent in 1987.¹⁵¹

Avadhani's¹⁵² study found that the repayment performance of large farmers was poorer than that of marginal farmers, implying thereby that part of their funds could have been used for unauthorised purposes.

The Programme Evaluation Organization (PEO) study reported that in many areas the percentage of overdues varied from 50 to 60 per cent. It was as high as 70 per cent in one of the selected districts in Uttar Pradesh, which, in real terms meant that no instalment of loan had been repaid, besides, adjustment of subsidy.¹⁵³

A review of nearly 20 micro level studies conducted in various parts of India during the period 1967 to 1991 on defaulters of institutional loans to agriculture was done by Anandteerth and

150. Reserve Bank of India, Report of the Study Team on Overdues of Co-operative Credit Institutions, Bombay, 1974.

151. Krishnan, C., "Regional Rural Banks and Recovery of Agricultural Credit : A Study", Agricultural Banker, Vol.13, No.2, April-June, 1990, P.29.

152. Avadhani, V.A., "Rural Retrogression and Institutional Finance", Economic and Political Weekly, Vol.14, No.26, June 30, 1979, PP.A75-85.

153. Government of India, Evaluation Report on Integrated Rural Development Programme, New Delhi, Planning Commission, Programme Evaluation Organisation (PEO), 1985.

Basanna.¹⁵⁴ On the basis of the results of these 20 studies, the review concluded that institutional loans to agriculture had been defaulted by all the categories of farmers-both wilfully and otherwise. The main reason for non wilful default was found to be the failure of the institutional loans to generate adequate income to the borrowers to repay the loans promptly. And the major reason for wilful default was found to be lack of supervision on the part of the officials of the financial institutions.

The Commitment -Utilisation Gap of Credit

The difference between the Rural Schematic Refinance (RSR) commitments and disbursements at the end of the year is called the utilisation gap. This gap has been declining over the years. The declining concentration of refinance among the states indicated the positive impact of measures undertaken by NABARD. The extent of concentration would be still lower if assessed in terms of refinance committed by NABARD to various states. The percentage of refinance drawn to total commitment of NABARD in most of the less developed states is less than that of the developed states. As on June 30, 1981, the drawals as percentage of commitment was the highest in Tamil Nadu (80 per cent) followed by Punjab and Gujarat (73 per cent each) and Haryana (67 per cent). Compared to this, the percentage of drawals to commitment was the lowest in Assam (24 per cent) followed in ascending order by Orissa (41 per cent), West Bengal, Madhya Pradesh and Kerala (45 per cent each). This varying utilisation of commitment as measured through coefficient of variation of percentage drawals explain about 26 percent of regional imbalances.¹⁵⁵

154. Anandteerth, Kittur and Basanna H., "A Review of Some Micro-Studies on Defaults of Institutional Loans to Agriculture", Land Bank Journal, Vol.31, No.1, September 1992, PP.53-55.

155. Sangwan,S.S., Op.cit., P.564.

The other endogenous factors which may affect the disbursement of NABARD refinance are the role of financing agencies involved and the extent of diversification in the schemes implemented. Prior to the nationalisation of important commercial banks in 1969, the SLDBs were solely financing for schematic loans in agriculture at the state level except in Assam, Tamil Nadu, Kerala and Punjab. In the first three exceptional states the commercial banks (CBs) have financed only for plantation crops grown on commercial lines. However, with the involvement of commercial banks after 1969 in the schematic lending for agriculture, the share of SLDBs has come down to 55 per cent in all - India NABARD refinance in 1981 from 91 per cent in 1969. In spite of this, the State Land Development Banks which also have political backing of the respective state governments may be regarded as spearheads of schematic lending in agriculture.¹⁵⁶

The share of SLDBs in the refinance disbursed for schematic lending as on June 30, 1985 was relatively higher in the developed states. The SLDBs in Andhra Pradesh, Karnataka and Maharashtra accounted for 65.93, 63.57 and 49.51 per cent of the respective total refinance availed by these states. Though in some other developed states like Punjab, Haryana, Tamil Nadu and Kerala the relative share of their SLDBs in the total refinance drawn in 1985 was not much higher, their cumulative refinance drawn per hectare of net sown area was higher than that in other states. On the other hand, the shares of SLDBs of the less developed states in 1985 were within the range of 8.6 to 47.2 per cent of the total refinance disbursed in these states.¹⁵⁷

The wide gap between commitment and drawals of refinance from NABARD by the SLDBs of various states had also

156. Ibid.

157. Ibid.

adversely affected their shares. At the all India level, the SLDBs have higher drawals as percentage of commitment as compared to that of commercial banks and it is in line with the leading role of the former under schematic lending. Among the SLDBs the drawals from the amount of refinance committed in 1981 were the highest in Tamil Nadu (90 per cent) followed by Haryana (89 per cent), Gujarat (84 per cent), Maharashtra (79 per cent) and Punjab (77 per cent). On the other hand, it was the lowest in Assam (23 per cent), West Bengal (38 per cent) and Orissa and Madhya Pradesh (41 per cent each). Thus, the drawals of SLDBs to commitment of refinance are higher in most of the developed states as compared to the less developed states. Even the drawals as percentage of commitment are higher in commercial banks in the developed states.¹⁵⁸

The degree of inequality at the state level in the refinance disbursed per hectare of net sown area is 74 per cent in terms of coefficient of variation as on June 30, 1985.¹⁵⁹

The refinance commitments to the member banks increased from less than Rs.5 crores in 1964-'65 to more than Rs.100 crores in 1972-'73 and Rs.1,170 crores in 1983-'84. Over the study period, the refinance commitments increased at the compound growth rate of 34 per cent. The annual disbursements over the study period increased at the compound growth of nearly 49 per cent. The cumulative disbursements amounted to more than Rs.4,441 crores at the end of June 1984. They amounted to Rs.100 crores in 1974-'75 and increased by nearly nine times in 1986. During the periods 1967-'69 and 1972-'73 there was phenomenal growth in the RSR commitments as well as disbursements. The first

158. Ibid., P.565.

159. Ibid., P.568.

two years coincide with the green revolution period.¹⁶⁰ In each year the refinancing institution made commitments to release Rural Schematic Refinance under each scheme sanctioned to the member bank. By the end of the year it was observed that most of the banks could not fully draw the sanctioned amount. In the first half of the study period, utilisation gaps were above 50 per cent in seven out of 10 years. In the second half of the period, a clear declining trend in utilisation gaps was noticed except in the year 1979-'80. The high utilisation gap in 1979-'80 was the result of two factors. Firstly, there was a sharp increase in the number of sanctioned schemes and the commitment of Rural Schematic refinance, as a result of several projects becoming eligible to draw funds from the World Bank/IDA.¹⁶¹ Secondly, in that year several parts of the country experienced severe drought conditions, which reduced the rural credit/RSR absorption in the country as a whole. The utilisation gaps narrowed down as one moves from the operational periods of ARC to NABARD. The high level of under-utilisation of RSR resulted in problems both at the national and at the operational level of the system. Firstly, it deprived the country of the precious foreign exchange and assistance from IDA, World Bank etc. Secondly, it resulted in slower rural development due to lower investments and asset creation than what was otherwise possible. Thirdly, it reduced the operational efficiency of the system.¹⁶²

Utilisation gaps were consistently above one third of the total RSR commitments till 1981-'82. Hence this was a matter of concern for all connected with or interested in the system of Rural Schematic Refinance. The high degree of under-utilisation of RSR was largely due to the following factors. Firstly, high level of overdues of the SLDBs

160. Elavia, B.H., Innovations in Rural Refinancing—The Indian Experience, Gujarat, Published by the Author, 1988, P.22.

161. Ibid., P.24.

162. Ibid., P.25.

made many branches ineligible for drawing RSR. Secondly, drought condition in one or the other part of the country every year reduced the credit absorption. Thirdly, there was a considerable time gap between the disbursement of RSR by bank branches and reporting them to their regional offices and the latter drawing RSR from NABARD.¹⁶³

Utilisation gaps followed a declining trend in the second decade of the study period, in contrast to the fluctuating trend during the first half of the period. Utilisation gaps were at the highest level of 58 per cent in 1976-'77. In this year, commercial banks received 72 per cent of total RSR, even though they had entered the RSR system in a big way only since one year.¹⁶⁴ There was a steadily declining trend in the corresponding utilisation gaps at the all India level since 1983-'84. There was a sharp fall in utilisation gap as a result of several steps taken by NABARD viz., rehabilitation of co-operative agencies. As per the study in Gujarat state the utilisation gap for the closed/completed schemes was separately calculated and was found to be just half of the level for all the schemes. Both minor irrigation and farm mechanisation had very low levels of utilisation gaps (8 per cent), while Land Development and Plantation Horticulture had full utilisation.¹⁶⁵

The Viability of Loans

To analyse a proposed agricultural project which would be beneficial from the standpoint of the economy as a whole, it is the financial flows which form the basis of assessment and which in turn forms the domain of financial analysis.¹⁶⁶ How elaborate the

163. Ibid.

164. Ibid., P.69.

165. Ibid., P.144.

166. Gittinger, J. Price, Economic Analysis of Agricultural Projects, Bombay, Agricultural Refinance and Development Corporation, The First Indian Reprint, 1976, P.130.

particular project would depend upon the organisation of the project and its complexity. Most agricultural projects would call for a financial projection based on at least one pattern farm plan assumed for participating farmers. The financial projections for the private firms or project entities may be quite summary in a simply organised project, but a project in which a number of different firms and project entities are concerned may involve a much more complex analysis.¹⁶⁷

To illustrate the application of economic and financial analysis technique to an agricultural project in a real life situation, Gittinger examines the Ivory Coast Cocoa planting and rehabilitation project. A bank loan of US \$7.5 million was proposed. The project would produce substantial foreign exchange earnings and would increase the participating farmers' income. Annual net earnings of foreign exchange at full production were estimated at US \$9 million from new plantations and US \$5 million from rehabilitation. The financial return to the government from new plantations was estimated at 35 per cent and from rehabilitation at over 50 per cent. The project was found to be suitable for a bank loan to the government of US \$7.5 million for a period of 15 years including seven years grace.¹⁶⁸

A study sponsored by the Planning Commission in 1972¹⁶⁹ went into the details of economic viability of farms in Udaipur district of Rajasthan. The study found that operational holdings below two hectares were economically non-viable and the economically viable size of operational holding varied with soil conditions, cropping pattern and irrigation.

167. Ibid., PP.130-131.

168. Ibid. PP., 162-163.

169. Tandon, B.K. and Murdia, B.S., Economic Viability of Farms in Udaipur District (Rajasthan), Report of a Study Sponsored by the Research Programmes Committee, Planning Commission, Government of India, New Delhi, Jain Brothers Publications, 1972.

Kurulkar,¹⁷⁰ in his study, adopted financial feasibility analysis to estimate the benefits of the farm investment in new wells, pumpsets and tractors. He adopted cost-benefit analysis to measure the financial feasibility of the selected projects, and found that all the three schemes studied were financially feasible.

An ex-post evaluation study on borewells, conducted by NABARD¹⁷¹ in Jodhpur district of Rajasthan, assessed the financial viability of the investment by working out the financial rate of return. An attempt has been made to estimate the economic rate of return (ERR) and the financial parameters have been changed to economic parameters by the use of shadow prices. As per the study the economic rate of return works out to more than 50 per cent. Another ex-post evaluation study was conducted by NABARD on Dugwell irrigation in Palakkad district of Kerala.¹⁷² The financial rates of return on investments under the scheme were estimated at 35%, 40% and above 50% for new wells and pumpsets, renovation of wells and pumpsets and renovation of wells without pumpsets respectively.

The IFMR evaluation study used the concept of incremental capital output ratio (ICOR) to assess the impact of loans sanctioned under Integrated Rural Development Programme. According to this study, the ICOR came close to the Planning Commission's assumption of 1.5, in the better developed districts only. While in the case of others, it ranged between 2 and 3. This being the case,

170. Kurulkar, R.P., Agricultural Finance in a Backward Region, Bombay, Himalaya Publishing House, 1983.

171. NABARD, Borewell in Jodhpur District - Rajasthan, An Ex-Post Evaluation Study, Evaluation Study Series No. Jaipur - 4, Jaipur, NABARD Regional Office, 1993, PP.39-40.

172. NABARD, Dugwell Irrigation in Palakkad District - Kerala, An Ex-Post Evaluation Study, Op.cit., P.4.

the most optimistic projection of incremental income came to Rs.2000/-, while the most pessimistic estimate worked out to Rs.1,333/- in 1984. By taking this result Bagchi ¹⁷³ argued that if the initial household income is Rs.4,800/- the gross income will range between Rs.6,800/- and Rs.6,133/-. Since this does not take into account the loan repayment amount the actual probability of the household crossing the poverty line would be low.

173. Institute of Financial Management and Research, 'An Economic Assessment of Poverty Eradication and Rural Unemployment Programmes and their Prospects', Madras, Mimeo, IFMR, April 1984.

SECTION III

RESEARCH GAPS IDENTIFIED FROM THE REVIEW OF LITERATURE

From the above review it appears that many of the studies are wanting either in terms of methodologies followed or in terms of issues covered by them. The following are the important research gaps identified on the basis of the review:

1. While analysing the aspect of credit supply and demand many studies looked into only the quantitative aspect and the qualitative aspect has not been studied. The need for such a study on credit is of special importance in the Kerala context.
2. The quantitative aspect of credit supply analysed by the National Commission of Agriculture (NCA) in 1984-'85 for Kerala state contradicts truth. As per the study the percentage of credit supply to requirement was 102, which indicates that the supply of credit was higher than the demand for it. The error in the calculation was mainly because in Kerala there has been a substantial amount under 'other crops'. Hence in the crop-wise requirement of credit it was likely that the credit requirement was somewhat underestimated.
3. While analysing the impact of loans on economic conditions of borrowers many studies took only income increase as a proxy, but did not focus attention on changes in other variables like employment and asset.
4. The studies dealing with the changes in the economic conditions of farmers who had borrowed institutional finance limited their analysis to income and did not explain the changes in their farming

practices like input use, cropping intensity, irrigation intensity, cropping pattern etc. in detail.

5. The problem of mounting overdues in agricultural sector has been discussed by several committies and research workers, more often from the financial institutions angle than from the borrowers' angle. Hence need for a grass-root level analysis from the rural borrowers' angle is felt.

6. The commitment utilisation gap of NABARD refinance is identified and studied only at the bank level i.e. between NABARD and the agency bank, but no study has been conducted with refinance to the ultimate beneficiary and the bank.

7. Only a few studies have been conducted to analyse the utilisation gaps with respect to different investment schemes.

8. The theoretical review of issues highlight a gap with reference to the Cost-benefit Calculation. Richard Heaver in the World Bank Staff Working Paper, Number 537,(p.6) mentions that the cost-benefit calculation was as if a series of photographs was taken of the project at successive year ends with cash flows artificially accumulated to those points for discounting. He mentions that in contrast to this static approach, cost-benefit analysis should be seen as involving the construction of an "implementation model" of the project, stressing dynamics and process as much as statics and quantity.

9. Very few studies analysed the financial viability of loans but failed to conduct such analysis, district-wise, bank-wise, scheme-wise and farmer category-wise

10. Very few studies have looked into the aspect of financial viability of schemes in relation to the infrastructural facilities and socio-economic development of the region.

11. Very few studies made an attempt to identify the role of subsidies in improving the financial viability of the project.

CHAPTER 4



GROWTH TREND & DISTRIBUTION
PATTERN OF RURAL SCHEMATIC
REFINANCE



CHAPTER 4

GROWTH TREND AND DISTRIBUTION PATTERN OF RURAL SCHEMATIC REFINANCE

Importance of Rural Credit in India

Institutional credit plays an important role in the capital formation in agriculture which is intrinsic to agricultural development. The share of the state in gross capital formation in agriculture in the country has gone up from 2.47 per cent in 1980-'81 to 3.29 per cent in 1986-'87 except marginal decline during 1982-'83 and 1984-'85 of 0.02 per cent and 0.20 per cent less than the preceding years.¹ There has been a phenomenal expansion of agricultural credit in Kerala since the early seventies. The outstanding total direct advances to agriculture and allied activities rose from Rs.11.54 crores as at the end of December 1970 to Rs.913.93 crores as on 31st March 1993. The primary sector continues to avail of the major chunk of priority sector credit, i.e. 49 per cent in 1990-'91, 55 per cent in 1991-'92 and 51 per cent in 1992-'93.² Commercial Banks continue to play the leading role in aggregate credit disbursement in the state under priority sector with a share of just below 50 per cent in the last three years.³

1. NABARD, State Credit Plan - 1994-'95, Thiruvananthapuram NABARD Regional office, DDPD section, 1995, P.7.

2. Ibid.,P.15.

3. Ibid.,P.17.

The role that credit plays in the functioning of agrarian economies cannot be overemphasised. As their capital gets locked up in the land and stock, farmers need to borrow either from private money lenders, landlords, relatives or credit institutions. Historical experience the world over amply demonstrates the fact that farmers' internally generated resources are often inadequate to meet their current and capital expenditure. Thus more often than not they enter in to the credit markets as borrowers. A publication of the United Nations succinctly highlights this point when it says; "most of the world's farmers have to borrow at some time many of them heavily - To raise agricultural production they will have to borrow still more. And more is always needed where there is redistribution of rights in land. It is thus in the interests of agriculture and general progress that credit be available to farmers in adequate amounts and at appropriate costs".⁴

In the past, non-institutional agents especially money lenders were the main source for the supply of rural credit in India. This is true in the case of Kerala also. But because of their unfair practices the cost of credit was too heavy for the farmers. To reduce the dependence of farmers on the non-institutional sources the government started increased lending to the agriculturists in the form of taccavi loans which had originated from 1793 onwards. The taccavi loans are to be granted either during the period of famine or for development purposes to the needy. But these loans were inadequate to meet the current cost of cultivation and consumption expenditure.⁵

4. Paranjothi, T. - Supply and Utilisation of Long-Term Institutional Credit for Agriculture - A Study with Reference to Trichur District in Kerala, Unpublished M.Phil Thesis, Thiruvananthapuram, Centre For Development Studies, 1987, P.1.

5. Sunanda . S., The Institutional Credit for Agriculture in Kerala-A Disaggregated Analysis, Unpublished M.Phil Thesis, Thiruvananthapuram, Centre for Development Studies, 1991, PP.3-4.

In the sphere of rural credit, the picture that emerges in Kerala is different from the rest of India. Therefore it will be useful to trace the growth of rural credit in Kerala. In Kerala, various forms of indigeneous credit institutions locally known as Kuries and Chitties had developed at an early stage and they met credit requirements for both productive and non-productive purposes. The growth of these institutions paved the way for rapid development of commercial banks in the rural areas.⁶ Though Malabar was lagging far behind, in the southern region, especially in the state of Travancore there was a greater proportion of banks in rural areas. Not surprisingly, an estimate revealed that 33 per cent of the banks in Travancore were located in rural areas.⁷ Another feature of rural credit market was that the various money lenders as a class were generally less prominent in Kerala than elsewhere in India.⁸ Even those who were engaged in money lending were slowly withdrawing from the field of rural credit in the southern region of the state.⁹

6. Varghese, T.C., "Agrarian and Economic Consequences : Land Tenures in Kerala", 1850-1960, Allied Publishers Pvt. Ltd., Calcutta, 1970, In Agricultural Banker, Vol.14, No.2, April-June 1991, P.15.

7. Oomen, M.A., "Rise and Growth of Banking in Kerala", Social-Scientist, October, 1975, In Agricultural Banker, April-June, 1991, P.15, Op.cit.

8. Raj, K.N. and Michael Tharakan, "Agrarian Reforms in Kerala and its Impact on the Rural Economy - A Preliminary Assessment", In Agrarian Reforms in Contemporary Developing Countries, (ed.) Ajith Kumar Ghose, New Delhi, Select Book Service Syndicate, 1984, In Agricultural Banker, April-June, 1991, Op.cit, P.15.

9. Pillai, V.R. and Panikkar PGK, Land Reclamation in Kerala, Bombay, Asia, Publishing House, 1965, In Agricultural Banker, April-June, 1991, Op.cit, P.15.

The Structure and Growth of Rural Institutional Credit in India

The concept of institutional credit for rural development was introduced in the country with the legislation of the Co-operative Credit Societies Act in 1904. Primary Agricultural Co-operative Societies (PACS) were organised at the village level to meet the short term credit needs of the farmers and were linked with the District Central Co-operative Banks (DCCBs). The Co-operative Land Mortgage Banks were established (the first such bank was established in Madras in 1929) for issuing long term loans to agriculturists.

Over the years, the co-operatives have significantly developed their activities to include general banking credit, input distribution, agro-processing, storage, warehousing etc. The credit co-operatives, though initially started with the objective of freeing farmers from the clutches of usurious money lenders, became the principal agency for the provision of rural credit, both for the production and investment purposes and assumed a developmental role. But the co-operative credit agencies of late, have become less effective due to the constant interference from the government through frequent experimentation in their set up and organisation, heavy vertical dependence for the sources of fund and the neglect of the main principle of co-operation, viz, thrift and self-reliance by the ground level credit institutions.

The nationalisation of commercial banks in 1969 heralded the expansion of the branch network and improved the access of the farmers to the institutional credit. This coupled with the establishment of Regional Rural Banks in 1975, made low cost banking for the poor a reality.¹⁰ Later the National Commission on Agriculture in its interim

10. NABARD, National Bank Newsletter, Vol.4, No.3-4, July 1, 1993, P.1.

report(1971) recommended the Farmers Service Societies (FSS).In March 1979 the RBI appointed a committee for reviewing arrangements for financing institutional credit for agriculture and rural development(CRAFICARD). The committee in its report pointed out that the problems of agricultural credit had not only grown in complexity and size, but had also merged with the larger task of rural development and recommended the setting up of of a new apex bank-The National Bank for Agriculture and Rural Development (NABARD).

The ACRC (1989),appointed by the RBI in 1986 and headed by A.M.Kushro, strongly advocated greater autonomy for the credit institutions and recommended the merger of the Regional Rural Banks with their sponsor banks and the creation of a National Apex Co-operative bank.The end result of the measures listed above and the increasing emphasis on the provision of institutional finance reduced the influence of professional money lenders in the villages and the role of informal credit diminished considerably.¹¹

At the end of July 1992 there were 28 State Co-operative Banks,351 District Co-operative Banks and 89000 Primary Agricultural Credit Societies(PACS) in the short-term structure,20 State Land Development Banks functioning through 1514 branches and 721 Primary Land Development Banks (PLDBs) with 644 branches in the long-term structure.¹²

The mid-term appraisal of the seventh Five year plan observed that against a target of Rs 350 crores of short-term credit by the end of

11. Sunanda, S., Op. cit., PP.9-10.

12. NABARD, National Bank Newsletter,Vol.4,No.6-7,October1,1993, P.1.

the seventh plan, the disbursement by Co-operatives by 1986-87 had been Rs 320 crores. Thus in Kerala credit supplied by co-operatives appears to be keeping pace with plan targets. Hence it is evident that co-operatives are playing a major role in the rural credit market of Kerala.¹³

During the last ten years (1982-1992) refinance disbursements by the National Bank in Kerala totalled to Rs 560 crores, thus helping creation of assets worth over Rs 827 crores in the agricultural sector as well as in the tiny and village industries sector. Plantation and horticulture crops, being the major agriculture activity in the state, account for the largest share in NABARD'S refinance support (Rs 172.40 crores). The refinance support to minor irrigation investments amounted to Rs 129 crores during the decade.¹⁴

NABARD also known as the 'Rural Reserve Bank' was conceived as the sole official agency of rural credit for promoting economic growth through rural development. Brought into being on July 12, 1982, this institution took over the entire undertaking of the then Agricultural Refinance and Development Corporation and also replaced the RBI in the matter of refinancing the State Co-operative banks and Regional Rural Banks.¹⁵

A new dimension and direction to the development of co-operative societies was provided by way of a three year project

13. Harikumar, S. and Sadananda, A.K., "Development of Co-operative Credit in the Rural Credit Market of Kerala", Agricultural Banker, Vol.14, No.2, April-June, 1991, PP.15-16.

14. NABARD, A Decade of Growth 1982-'92, Thiruvananthapuram, St. Joseph's Press, 1993, PP. 3-6.

15. Subrahmanya, K.N., "NABARD Needs Gearing Up", Southern Economist, Vol.26, No.3, June 1, 1987, P.1.

launched by NABARD in the middle of 1986. The project was to be operative in 20 selected districts and benefits 600 Primary Agriculture Credit Societies (PACS) and Large Sized Multi-Purpose Societies (LAMPS) in the tribal areas. Under the project, a 15 point development programme had been formulated to develop societies to strengthen operational efficiency in terms on manpower, financial resources, procedural formalities and intensive training of the concerned staff.¹⁶

Schematic lending is the prestigious heritage NABARD has inherited from the erstwhile ARDC. From a modest disbursement of Rs.31 crores by ARDC in 1970-'71, the disbursements under schematic lending have reached an all time high of Rs.1,192/- crores in 1985-'86. The lending programme under schematic lending has been fixed at Rs.1,280 crores for the year 1986-'87. To undertake such massive task of appraisal, sanction, disbursement and follow-up of schematic lending, certain procedures have been developed over the years with built-in checks and counter checks to ensure proper project appraisal, implementation and monitoring.¹⁷

NABARD may encourage greater investment of financial institutions, firstly by liberalising its terms and conditions of lending under various schemes to be implemented in the north-eastern region and other backward states. Secondly, NABARD need not be too rigid about recovery norms in respect of bank branches operating in backward areas for availing refinance. Thirdly, it may consider providing higher interest margin on schemes to be implemented by banks in the region by lowering its rate of interest on refinance.¹⁸

16. Ibid, P.2.

17. NABARD, Induction Course Reading Material, Lucknow, NABARD Staff College, 1987, P.130.

18. "Regional Disparities Persist",- Economic and Political Weekly, Vol.19, No.9, March, 1984, P.370.

NABARD has to streamline rural credit to achieve the basic objectives of the institutional credit policy. Non-institutional credit continues to pre-dominate in the country side though its share in the total has declined drastically from more than 95 per cent to 65 per cent towards the second half of the seventies. However, it is observed that the lions share of this credit has gone to the various social classes which benefitted from co-operatives. During the Janatha Government's rule there was a wave of writing off the overdues of co-operatives as well as commercial banks. The credit structure has been politicised in favour of the established better-off classes. Thus structural changes seem to be required in this area.¹⁹

As a result of the poor recovery performance several co-operative banks were not able to operate on the credit limits sanctioned by NABARD due to their inability to maintain Non-Overdue Cover. NABARD took initiative and formulated the Instant Fresh Finance Scheme in 1988. Under this scheme, it provided funds to the co-operative banks for issuance of fresh finance to the members of PACS who had repaid their dues completely.²⁰

Taking into account the operational problems and delays in receipt of insurance claim by the banks from the General Insurance Corporation (GIC), NABARD decided to permit DCCBs to convert the entire loans outstanding in the years affected by the natural calamities into medium-term loans in the first instance with the provision that the amount of compensation as and when received from GIC will be

19. Tiwari, R.S., "Can NABARD Provide New Thrust for Rural Credit", *Southern Economist*, Vol.20, No.24, April 15, 1982, P.33.

20. Viswanadha Rao K., "NABARD's Role in Production and Marketing Credit", *Agricultural Banker*, Vol.16, No.2, April-June 1993, P.3.

proportionately remitted to NABARD towards adjustment of medium-term conversion loans.²¹ Hence the importance of NABARD in the rural scenario.

OPERATIONS OF NABARD IN INDIA

Resources of NABARD

NABARD's resources were replenished during 1990-'91 (April-March) by the Reserve Bank's contribution and NABARD's contribution to the National Rural Credit (Long-Term Operations) and National Rural Credit (NRC) (Stabilisation Fund). As per the Agricultural and Rural Debt Relief Scheme, 1990, NABARD acts as a channel for disbursing the funds received through the Reserve Bank towards grants to RRBs and loans/grants to SCBs and SLDBs under the scheme. Amounts aggregating to Rs.1,113 crores and Rs.897 crores were disbursed as grants and loans respectively. The funds outstanding as on March 31, 1991 under the scheme amounted to Rs.692 crores.²²

During 1990-'91, the Reserve Bank contributed Rs.375 crores to NRC (LTO) fund and Rs.10 crores to NRC (Stabilisation) fund out of its profits as compared with Rs.330 crores and Rs.10 crores respectively in the previous year. Similarly NABARD itself contributed Rs.400 crores towards NRC (LTO) fund and Rs.20 crores to NRC (Stabilisation) fund during the year as compared with Rs.350 crores and Rs.10 crores respectively, in the previous year. In sharp contrast to a net borrowing

21. Ibid., P.4.

22. Reserve Bank of India, "Report on Trend and Progress of Banking in India", Reserve bank of India Bulletin, Supplement, Vol.46, No.4, April 1992, P.121.

of Rs.524 crores during 1989-'90, there was a net repayment of Rs.560 crores during 1990-'91 under the General Line of Credit (GLC), for short-term lending operations for agriculture and other purposes under section 17(4E) of the Reserve Bank of India Act, 1934. The limit under this line of credit sanctioned by the Reserve Bank during 1990-'91 (April-March) was Rs.3,350 crores (Rs.2,700 crores under GLC-I for Seasonal Agricultural Operations (SAO) and Rs.650 crores under GLC II for purposes other than SAO or the same as in the previous year.²³

The gross borrowings from the Government of India during the period 1990-'91 (April-March) amounted to Rs.3 crores. Taking into account repayments of Rs.197 crores during the period, there was net reduction of Rs.194 crores in contrast to net borrowing of Rs.24 crores during 1989-'90 (April-March).

NABARD resorted to market borrowings in 1990-'91 (April-March) to the extent of Rs.90 crores by issuing the Tenth Series of NABARD Bonds at par having a maturity period of 20 years and carrying an interest rate of 11.5 per cent per annum. As there was no redemption during the period, the net borrowings amounted to Rs.50 crores during 1989-'90.

NABARD continued to receive deposits from tea companies under the Investment Deposit Account Scheme, 1986 (Tea). The balances under the Tea Development Account Scheme, 1985 and Investment Deposit Account Scheme, 1986 (Tea) as at the end of March 1991 were Rs.7 crores and Rs.54 crores respectively, as against the balances of Rs.9 crores and Rs.23 crores under the respective schemes at the end

23. Ibid, P.122.

of March 1990. Deposits were also received by NABARD from the Central Government and State Governments under the Special Loans Account for financing ineligible farmers under Command Area Development Authority (CADA) projects. The balances outstanding as on March 31, 1991 under this head of account were Rs.20 crores from the Central government and Rs.11 crores from the State governments as against Rs.19 crores and Rs.11 crores respectively; at the end of March 1990.²⁴

NABARD's Assistance to Agriculture and Other Allied Activities

During 1990-'91 (July-June) NABARD sanctioned short-term credit limits for financing seasonal agricultural operations aggregating Rs.3,015 crores as against Rs.2,947 crores for the year 1989-'90 (July-June). Of the limits sanctioned for 1990-'91, a limit aggregating Rs.300 crores was sanctioned under the Oilseeds Production Programme of the Government of India as against Rs.288 crores for 1989-'90. The outstanding amount due to NABARD which was Rs.2,110 crores as on June 30, 1990, declined to Rs.1,566 crores as on June 30, 1991, registering a fall of 26 per cent.²⁵ The RRBs were sanctioned Rs.473 crores in 1990-'91 for financing agricultural as well as other activities as against Rs.227 crores in 1982-'83.²⁶ The performance of NABARD during the first decade of its existence in providing refinance for agricultural crop loans and handloom finance etc. has been impressive and worth appreciating. During the period from 1982-'83 to 1991-'92,

24. Ibid.

25. Ibid., PP.122-123.

26. NABARD, National Bank Newsletter, Vol.2, No.6-9, December-1, 1991, P.3.

the seasonal agricultural operations (SAO) credit limits sanctioned by NABARD to co-operatives rose from Rs.1,120 crores to Rs.3,059 crores. The amount of maximum utilisation also rose from Rs.858 crores to Rs.2,146 corresponding this period. Similarly, the ST (SAO) limits sanctioned by the bank to RRBs rose from Rs.280 crores during 1988-'89, the year for which separate limits were sanctioned for SAO to Rs.485 crores during 1991-'92.²⁷

During the calendar year 1990, credit limits for medium-term agricultural purposes sanctioned by NABARD to SCBs and draws against these limits amounted to Rs.10 crores and Rs.7 crores respectively, as against Rs.16 crores and Rs.4 crores respectively, in 1989. The outstanding amount at the end of December 1990 was Rs.16 crores as against Rs.19 crores at the end of December 1989.

During 1990-'91 (July-June), SCBs/CCBs were sanctioned credit limits of Rs.161 crores to convert short-term agricultural loans granted to farmers into medium-term loans due to the occurrence of widespread crop failure following drought/floods as against Rs.147 crores in 1989-'90 (July-June). The outstandings under these limits amounted to Rs.278 crores as on June 30, 1991 as against Rs.274 crores as on June 30, 1990.

During the year 1990-'91, long-term loans amounting to Rs.34 crores were sanctioned to 17 state governments to enable them to make contribution to the share capital of co-operative credit institutions. Loans aggregating Rs.28 crores were drawn till March 31, 1991, which included some of the loans sanctioned for the previous year.²⁸

27. Viswanadha Rao K., Op.cit., P.1.

28. Reserve Bank of India Bulletin, April 1992 (supplement), Op.cit., P.123.

The National Bank has been associated with implementation of 48 projects with external assistance from international aid agencies since 1969. Out of these 48 projects, 41 were assisted by the World Bank Group: two each were supported by the International Fund for Agricultural Development (IFAD), the Organisation of Petroleum Exporting Countries (OPEC), fund for International Development and the Swiss Development Co-operation (SDC), and one by Kreditanstalt fur Wiederaufbau (KfW) of the Federal Republic of Germany.²⁹ Besides the assistance received from the World Bank, NABARD has also received assistance from seven donor countries/agencies by way of co-financing of General Lines of Credit. As on June 30, 1991, NABARD received assistance under 29 bilateral credits in various currencies aggregating to an amount equivalent to US \$774 millions. Of these 29 credits, 28 have already been closed.³⁰

The announcement regarding the loan waiver by the Government of India and State Governments adversely affected recoveries which came to a grinding halt. Farmers who had taken loans during Kharif 1989 and Rabi 1989-'90, virtually refrained from repaying their dues even in respect of loans which were not eligible for relief under the scheme on expectations that the government might ultimately extend the relief to cover such loans also. As a result, the availability of funds to banks for repaying purposes were severely impaired. In order to ensure adequate flow of credit to the new and non-defaulting members of PACS, NABARD extended certain relaxations in the sanction and utilisation of limits such as allowing drawals in the limits despite banks defaulting to NABARD allowing drawals under the scheme of Instant

29. Ibid

30. Ibid., P.126

Fresh Finance for members of PACS who repaid their earlier dues as well as new and hitherto non-borrowing members of PACS without CCBs having sufficient non-overdue cover to operate on the limits, relaxations in the minimum involvement criteria, waiving the seasonality discipline etc. From the year 1990-'91, the special programmes for increasing production of oilseeds, i.e., National Oilseeds Development Project and Oilseeds Production Thrust Project have been merged into a single programme, viz, Oilseeds Production Programme, the coverage of which has been increased from 246 to 282 districts in 17 states. NABARD has continued to sanction a separate line of credit for this programme to SCBs and RRBs without any reference to the level of their overdues.

With a view to enabling farmers to avail of loans against hypothecation of their agricultural produce and to avoid distress sale, the Government of India introduced in November 1988, on a pilot basis, the Produce (marketing) Loan Scheme. This was kept in abeyance since April 1989 at the insistence of the Government of India. However, it was decided in April 1990 to reopen the line of credit for Rabi 1989-'90 crops. In July 1990, the coverage of the scheme was widened from 14 districts to 82 districts.³¹

Based on the recommendation of the Agricultural Credit Review Committee, banks were advised to consider introduction of Cash Credit system of lending for seasonal agricultural operations on a selective basis in compact blocks with high level of agricultural development, perennial irrigation facilities and multiple cropping pattern. Keeping in

31. *Ibid.*, P.128.

view the enlarged volume of business of the co-operatives under both farm and non-farm activities, necessitating additional borrowing power, it was felt necessary to strengthen the share capital base of these institutions. Accordingly, the ceiling for sanction of such loans in respect of CCBs was raised from Rs.1.0 crores to Rs.1.5 crores. The government contribution to the share capital of co-operative credit institutions was available to the maximum extent of 50 per cent of their paid-up share capital.³²

Rural Schematic Refinance (RSR) in India

TABLE : 4.1.

**ALL INDIA SANCTIONS AND DISBURSMENTS OF NABARD
UNDER SCHEMATIC LENDING 1982 - '83 TO 1992 - '93.**

YEAR	NO. OF SCHEMES	RS. IN CRORES		
		FINANCIAL ASSISTANCE	COMMITMENTS	DISBURSEMENT
1982 - 83	4,957.000	1,268.32	1,018.90	702.69
1983 - 84	4,961.000	1,446.52	1,169.90	892.44
1984 - 85	5,601.000	1,560.07	1,233.21	1,060.87
1985 - 86	7,964.000	1,814.07	1,463.96	1,191.65
1986 - 87	10,099.000	1,810.79	1,483.31	1,334.20
1987 - 88	9,995.000	2,561.17	2,037.71	1,481.91
1988 - 89	7,037.000	1,760.03	1,380.76	1,270.15
1989 - 90	9,211.000	2,872.06	2,039.33	1,702.13
1990 - 91	10,650.000	2,807.37	2,118.70	1,902.17
1991 - 92	6,706.000	2,957.48	2,236.15	2,054.36
1992 - 93	6,493.000	4,003.34	2,895.89	2,359.08
TOTAL	83,674.000	24,861.22	19,077.82	15,951.65

SOURCE : ANNUAL REPORTS
OF NABARD

A review of the RSR disbursements in India is clear from table 4.1. Table 4.1 explains the sanctions and disbursements of NABARD under schematic lending over the years 1982-'83 to 1992-'93. The number of schemes sanctioned grew at an increasing rate between 1982-'83 and 1986-'87. Between 1987-'88 and 1992-'93, there was a

32. Ibid., P.129.

decreasing trend except for 1990-'91. The total number of schemes sanctioned between 1982-'83 and 1992-'93 was 83,674.

The National Banks disbursements have been increasing from 1982-'83 to 1992-'93 except during 1988-'89. It increased from Rs.702.69 crores in 1982-'83 to Rs.2,359.08 crores in 1992-'93. It amounted to Rs.15,951.65 crores towards the end of 1992-'93, whereas the amount committed was Rs.19,077.82 crores.

There were 32,196 delivery units of the RSR system in the country as on June end 1982. Till the end of June 1984, 30,504 investment schemes were sanctioned. An important indicator of the growth of the RSR system is the refinance ratio measured as the ratio of RSR to the direct institutional term credit for agriculture deployed in the countryside. The ratio indicated the role played by the refinancing institution in agricultural and rural development. The Refinance ratio increased from 36 to 40 per cent between 1981 and 1982 (June end).³³

There was a phenomenal growth in the number of RSR schemes sanctioned, committed and disbursed as on 30th June 1984. The number of sanctioned schemes increased at the compound growth rate of 39 per cent, whereas the commitments and disbursements increased at the rate of 34 and 49 per cent respectively. The RSR system was found to be responsive to the changes in demand from the economy. From the supply side the structural and organisational changes had a favourable impact on the flow of RSR.

33. Elavia B.H., Innovations in Rural Refinancing -The Indian Experience, published by the Author, Gujarat, 1988, P.22-23.

As on 30th June 1984 the share of CBs, RRBs, SLDBs and SCBs in the cumulative RSR were 48, 5, 44, and 3 per cent respectively. It may be noted that the combined share of CBs and RRBs (53 per cent) exceeded the combined share of SLDBs and SCBs (47 per cent). The corresponding shares in the year 1983-'84 were 60 and 40 per cent respectively. It needs to be noted that CBs had become the major agency dispensing RSR by 1984. The investment scheme-wise distribution of RSR disbursements revealed that only Farm Mechanisation (FM) had higher compound growth rates than the natural growth rate, as on 30th June 1984. As on 30th June end 1984 nearly half of the cumulative RSR disbursements were for MI scheme alone. FM came second with nearly one fifth share in the total followed by IRDP with 12 per cent. All other purposes claimed less than 10 per cent. The share of IRDP in the annual disbursements of 1983-'84 was 26 per cent which was second to that of MI (35 per cent).³⁴

TABLE 4.2.

STATE-WISE DISTRIBUTION OF RSR IN INDIA (AS ON 30 JUNE 1984)

SL. NO.	STATES	% SHARE OF EACH STATE	RSR PER HECTARE OF NET SOWN AREA (IN RS.)
1.000	PUNJAB	10.460	1,109.000
2.000	HARYANA	8.520	1,051.000
3.000	KERALA	2.570	523.000
4.000	ANDHRA PRADESH	11.970	495.000
5.000	TAMIL NADU	5.220	433.000
6.000	UTAR PRADESH	15.060	388.000
7.000	BIHAR	6.220	332.000
8.000	KARNATAKA	6.190	278.000
9.000	ORISSA	3.640	263.000
10.000	GUJARAT	5.270	244.000
11.000	MAHARASHTRA	9.110	221.000
12.000	MADHYAPRADESH	7.300	174.000
13.000	WEST BENGAL	1.940	155.000
14.000	RAJASTHAN	4.720	137.000
15.000	ASSAM	0.770	128.000
COEFFICIENT OF VARIATION		0.590	0.770

N.B. Column 4 is computed on the basis of the net sown area data of the year 1980-'81

34. Ibid., S PP.39-40

Table 4.2 analyses the state-wise distribution of RSR with a view to finding out how far this policy has been successful. Two parameters are used for the purpose. Firstly, the percentage share of each state in the total RSR disbursed in the country. Secondly, RSR per hectare of the net sown area (NSA) are calculated for each state. Table 4.2 presents data relating to the two parameters.

The coefficient of variation is used to find out whether the inter-state variations have decreased or increased. As shown in table 4.2, the variations in the percentage shares between the states have followed a declining trend.³⁵

As per the study conducted by Sangwan SS, the regional imbalances in refinance disbursed by NABARD and its predecessors for schematic lending in agriculture show a continuous decline in the states during the period 1969-'85. The share of the five relatively developed states of Punjab, Haryana, Andhra Pradesh, Karnataka and Tamil Nadu in the total refinance disbursed had decreased from about 77 per cent in 1969 to 42 per cent in 1985. On the other hand, the share of refinance of the less developed states like Bihar, Orissa, West Bengal, Madhya Pradesh, Uttar Pradesh and Rajasthan had increased from 6 per cent in 1969 to 39 per cent in 1985 due to the efforts of the refinance institution. The degree of inequality at the state level in the refinance disbursed per hectare of NSA is 74 per cent in terms of coefficient of variation as on June 30, 1985. The analysis had revealed that the indigeneous factors like lower utilisation of refinance commitment from NABARD, relatively poor performance of SLDBs and low degree of diversification in the schemes financed were positively associated with the low disbursement of refinance in some of the states.³⁶ Among the individual states the refinance per hectare of NSA as on

June 30, 1985 was the highest in Punjab (Rs.1,368/-) followed by Haryana (Rs.1,173/-), Kerala (Rs.693/-) and Andhra Pradesh (Rs.578/-). On the other hand, it was low in Madhya Pradesh (Rs.216/-), West Bengal and Rajasthan (Rs.175/- each) and the lowest in Assam (Rs.171/-).³⁷

OPERATIONS OF NABARD IN KERALA

Profile of Kerala

The entire state falls under zone XII (West coast plains and ghats) of the 15 agro-climatic zones of the country as indicated by the Planning Commission. Physiographically the state can be divided into three regions viz, coastal plains in the west, the middle hilly regions and the Western highland with rocks and loamy soil ranging in elevation from 1,000 to 2,500 metres. The state has an area of 38,863 sq.kms. constituting 1.18 per cent of the total geographical area of the country. For administrative purposes, the state has been divided into 14 districts, 152 blocks, 983 panchayats and 1,452 revenue villages. As per 1991 census the population of the state is 2.90 crores which constitute 3.4 per cent of the country's population. The population of SC/ST account for 11 per cent as per 1991 census. About 74 per cent of the state's population is rural which is slightly lower than the all India level of 76.3 per cent. The density of population in the state at 747 persons per sq. km. is much higher than the national average of 257. With a literacy rate of 91%, the state has the distinction of the highest literacy rate in the country, as against the national average of 52 per cent.

35. Ibid., PP.38-39.

36. Sangwan, S.S., "Agricultural Investment and Regional Imbalances: A Study of Refinance Disbursed by NABARD", Indian Journal of Agricultural Economics, Vol.41, No.4, October-December, 1986, P.568.

37. Ibid., P.562.

The state is well advanced from the point of view of infrastructure and social sector viz, roads, railways, electricity, education, health and banking. All the villages in the state are electrified as against the all India average of 83 per cent as on 31.03.1991. The index of relative development of infrastructure worked out by CMIE for the state is 138 for the year 1990-'91 against the all India base of 100, ranking fourth after Punjab, Haryana and Tamil Nadu.³⁸

As the industrial base of the state is small, its share to the State Domestic Product (SDP) is 23 per cent only. Most of the industries are agro-based, of which coir industry is most prominent. It employs 3.83 lakhs of the rural population. About 85 per cent of coir and 90 per cent of coir products of the nation are manufactured in Kerala. There has been major thrust to develop the other cottage, village and tiny industries. Tertiary sector accounts for about 39 per cent of SDP.³⁹

TABLE : 4.3.

ECONOMY

	RS. IN CRORES	
	AT CURRENT PRICES	AT CONSTANT PRICES (1980 - 81)
STATE INCOME	10,174.00	4,705.00
GROWTH RATE (% OF CHANGE AFTER PREVIOUS YEAR)	11.36	5.88
STATE PER CAPITA INCOME	3,451.00	1,596.00
GROWTH RATE (% OF CHANGE)	9.69	4.31
NATIONAL INCOME	346,925.00	174,798.00
GROWTH RATE (% OF CHANGE)	11.94	5.20
PER CAPITA NATIONAL INCOME	4,252.00	2,142.00
GROWTH RATE (% OF CHANGE)	9.73	3.08

SOURCE : CANARA BANK , KERALA A BANKING PROFILE , STATE LEVEL BANKER'S COMMITTEE THIRUVANTHAPURAM, 1992, P.11.

Table 4.3 presents information on the income and per capita incomes and the growth rate at the state and national level. The state

38. NABARD, State Credit Plan, 1994-'95, Op.cit., pp 1-2.

39. Ibid., P.6.

income at current prices was Rs.10,174 crores, whereas the national income was Rs.3,46,925 crores. On the other hand the state per capita income at current prices was Rs.3,451 crores whereas the per capita national income was Rs.4,252 crores.

Rainfall:

Though Kerala receives heavy annual rainfall it is unevenly distributed among the months and across the districts. Nearly 60 per cent of the annual rainfall is received during the months of June, July and August (south-west monsoon), and the rest during September-November (north-east monsoon). Normal rainfall in the southern district, Thiruvananthapuram is 2,002 mm and in the central district Ernakulam is 3,529 mm. In palakkad it is 2,398 mm and in Kannur the northern most district it is 2,923 mm. The average rainfall in the state during 1991 was 3,106 mm. The normal average rainfall in the state is 2,961 mm. Table 4.4 gives the district-wise annual average rainfall during 1988, 1989, 1990 and 1991.

Land Use Pattern:-

Table 4.5 gives the land use pattern in Kerala. Production of the major agricultural crops during 1989-'90 is highlighted. The area under cultivation is highest for coconut (8,75,892 ha) followed by rice (5,83,389) and rubber (3,76,000). Table 4.5 explains the production of the various crops in tonnes. The productivity of the crop in Kgs./hectare and the percentage of change over the previous year is also explained.

The economy of the state is basically agrarian. However, there has been a decline in the share of agriculture in the state's income.

About 45 per cent of the state's income today comes from the tertiary sector. The productivity in agriculture, industry and Service Sectors in state has been on the decline in the recent past.⁴⁰

TABLE : 4.4.

DISTRICT- WISE ANNUAL AVERAGE RAINFALL

DISTRICTS	NORMAL	1988	1989	1990	1991
1	2	3	4	5	6
THIRUVANANTHAPURAM	2,002.000	1,683.000	1,776.000	1,521.000	2,137.000
KOLLAM	3,739.000	2,181.000	2,767.000	2,018.000	3,036.000
PATHANAMTHITTA	2,414.000	---	2,456.000	2,834.000	3,374.000
ALAPPUZHA	2,702.000	3,079.000	2,512.000	2,693.000	2,680.000
KOTTAYM	3,263.000	2,802.000	2,711.000	2,913.000	2,954.000
IDUKKI	2,889.000	3,813.000	2,731.000	3,782.000	4,104.000
ERNAKULAM	3,529.000	2,810.000	2,844.000	2,467.000	3,328.000
THRISSUR	3,177.000	2,577.000	2,492.000	2,757.000	3,393.000
PALAKKAD	2,398.000	1,722.000	1,868.000	1,771.000	2,402.000
MALAPPURAM	2,900.000	2,176.000	2,151.000	2,722.000	3,000.000
KOZHICKODE	2,625.000	3,274.000	2,831.000	3,007.000	3,265.000
WYANAD	3,594.000	2,040.000	2,228.000	3,180.000	2,792.000
KANNUR	2,923.000	3,419.000	3,075.000	3,214.000	3,569.000
KASARGOD	3,593.000	----	3,548.000	4,075.000	3,430.000
KERALA STATE	2,961.000	2,653.000	2,642.000	2,780.000	3,106.000

SOURCE : GOVT. OF KERALA , STATISTICS FOR PLANNING , DEPARTMENT OF ECONOMICS AND STATISTICS , THIRUVANANTHAPURAM , 1993, P. 37.

Agriculture in Kerala exhibits certain unique features, which distinguishes it from agriculture in the rest of India. With its higher density of population (655 persons per square kilometre), relatively small holdings (average size of holding being only 0.43 hectare) comparatively high wage rates, cash/plantation crops dominated cropping pattern, high rainfall, relatively low percentage of area under irrigation and high intensity of cropping etc., Kerala becomes

40. Canara Bank, Kerala A Banking Profile, Thiruvananthapuram, State Level Bankers' Committee, 1992, PP.8-9.

unique in agriculture.⁴¹ Between 1960-'61 to 1982-'83, production of all crops in Kerala, increased at an annual compound rate of 1.71 per cent. The period was divided into two sub periods. During the first sub-period the growth rate was 3.22 per cent and during the second sub-period it was -0.39 per cent. The all India growth rate for 1960-'61 to 1982-'83 was 2.48 per cent and for the two sub-periods the rates were 2.19 per cent and 1.85 per cent. The growth rate in yield in Kerala showed a declining trend. The rate of growth of yield was 0.63 per cent for the entire period; it was 0.78 percent for the first sub-period and 0.50 per cent for the second period. However, growth rates in yield at the all India level showed an increasing trend; 1.62 per cent for the entire period, and 1.27 per cent and 1.78 per cent for the two sub-periods.⁴² For Kerala the growth in production is mainly influenced by the increase in acreage, and to a lesser extent by the changes in yield

TABLE 4.5

AGRICULTURAL PRODUCTION OF MAJOR CROPS DURING 1989-90

CROP	AREA CULTI - VAED (Ha)	PRODUCTION IN TONNES	PRODUCTIVITY (Kg/Ha)	% CHANGE
RICE	583,389.000	1,012,558.000	1,956.000	11.580
PEPPER	151,423.000	37,736.000	249.000	-9.450
CARDAMUM	61,610.000	1,985.000	32.000	-27.270
CASHEW NUT	124,167.000	108,879.000	877.000	1.040
TAPIOCA	205,560.000	3,763,670.000	18,309.000	-1.970
**COCONUT	875,892.000	4,394.000	5,017.000	--
RUBBER	376,000.000	275,397.000	1,025.000	5.990

SOURCE : CANARA BANK , KERALA A BANKING PROFILE ,

STATE LEVEL BANKERS' COMMITTEE , THIRUVANANTHAPURAM, 1992 , p 9

** COCONUT PRODUCTION IN MILLION NUTS AND PRODUCTIVITY IN NOS.

41. Krishnan M. et.al, Growth and Instability in Kerala Agriculture, Agricultural Situation in India, Vol.XLVI, No.1, April 1991, P.21.

42. Sivanandan P.K., Kerala's Agricultural Performance : Differential Trends and Determinants of Growth, Unpublished M.Phil Thesis, Thiruvananthapuram ,Centre for Development Studies, ,1985, PP.8-9.

and cropping pattern. However, at the all India level, yield continued to grow at a higher rate though growth of area and cropping pattern showed a declining trend. The declining trend in yield and cropping pattern in Kerala is particularly disturbing because of the very low land-man ratio and a diminishing land frontier for expansion of area under cultivation.⁴³

In 1990-'91, 78 per cent of the gross cropped area was plantation and horticulture. It accounts for the production of 96 per cent of pepper, 92 per cent of rubber, 87 per cent of oil palm, 72 per cent of cocoa, 61 per cent of cardamom, 57 per cent of coconut and 47 per cent of cashewnut in the country. Though the area under cultivation has not shown much increase during the period 1980-'81 to 1990-'91, there had been inter-sectoral variations of major crops. The gross cropped area under paddy at 8.97 lakhs ha in 1980-'81 declined to 5.41 lakhs ha in 1990-'91, while there has been increase in the area under rubber and coconut by about 1.74 lakhs ha and 2 lakhs ha respectively during the above period. Coconut continues to hold the dominant position in the coverage of area under plantation and horticulture crops and its contribution to agricultural income of the state. The coverage of area under coconut plantation was 8.46 lakhs ha in 1990-'91. The area under rubber plantation has increased from 2.38 lakhs ha in 1980-'81 to 4.11 lakhs ha in 1990-'91. Despite decline in the area under cashewnut by 17 per cent from 1.41 lakhs ha in 1980-'81 to 1.17 lakhs ha in 1991-'92 due to switch over to rubber/coconut plantation, cashewnut continues to be an important crop in Kerala.

While Kerala was having the lowest gross cropped area per person of rural population at 0.14 ha during 1986-'89 as against the

43. Ibid.,P.11.

all India average of 0.34 ha, the income generation per ha area at Rs.9,417/- in the state was the highest in the country as against the all India average of Rs.4,646/- during the above period. However, the per capita rural income at Rs.1,306/- was lower than the all India average of Rs.1,564/- during the same period. The area under forest at 10.82 lakhs ha constitutes 27.85 per cent of the total reporting area as against the all India average of 20.3 per cent. Of the remaining 72.15 per cent of the total reporting area, 57.84 per cent constitutes net sown area as against 46 per cent at all India level thereby indicating less scope for increasing production through expansion of area under cultivation. The increase in production is possible mainly through raising productivity. In view of the above situation there has been large scale switch over in land-use pattern from food grains to plantation crops like rubber and coconut.⁴⁴ Rubber recorded the second highest growth rate of area at 3.75 per cent and highest growth rate in production amongst all crops considered for the state. This is primarily because of the stability in prices of rubber for many years. This has been made possible mainly by regulating imports and releasing imported rubber in times of impending price fluctuations.⁴⁵

Table 4.6 gives the land-utilisation pattern in Kerala (in percentage) from 1975-'76 to 1990-'91. In 1990-'91 the total cropped area in the state was 78.32 per cent, of which 57.83 per cent was the net area sown, 27.83 per cent forests, 20.49 per cent of the area sown more than once and 7.65 per cent of the land put to non-agricultural uses. More details over the years are provided in table 4.6

44. NABARD, State Credit Plan 1994-'95. , Op.cit., PP.2-5.

45. Krishnan ,M. et.al, Op.cit.

TABLE : 4.6.**LAND UTILISATION PATTERN IN KERALA (IN %)**

	HEAD OF CLASSIFICATION	1975 - 76	1980 - 81	1985 - 86	1986 - 87	1987 - 88	1988 - 89	1989 - 90	1990 - 91
	1	2	3	4	5	6	7	8	9
1	TOTAL GEOGRAPHICAL AREA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
2	FOREST	27.84	27.84	27.84	27.84	27.83	27.83	27.83	27.83
3	LAND PUT TO NON-AGRI. USES	6.67	6.94	7.17	6.77	7.33	7.32	7.33	7.65
4	BARREN AND UNCULTIVABLE	2.02	2.21	2.14	2.12	1.87	1.83	1.70	1.50
5	PERMANENT PASTURES AND OTHER GRAZING	0.51	0.14	0.11	0.10	0.08	0.09	0.08	0.05
6	MISC. TREE CROPS NOT INCLUDED IN NET SOWN AREA	2.17	1.64	1.29	1.20	1.04	1.07	0.98	0.89
7	CULTIVABLE WASTE	2.92	3.32	3.23	3.33	2.97	2.98	2.76	2.43
8	FALLOW OTHER THAN CURRENT FALLOW	0.59	0.69	0.72	0.71	0.74	0.73	0.68	0.68
9	CURRENT FALLOW	0.94	1.12	1.11	1.14	1.23	1.20	1.19	1.14
10	NET AREA SOWN	56.34	56.10	53.81	56.79	56.91	56.95	57.45	57.83
11	AREA SOWN MORE THAN ONCE	20.38	18.15	17.39	17.08	17.72	19.32	20.25	20.49
12	TOTAL CROPPED AREA	76.72	74.25	73.77	73.87	74.63	76.27	77.70	78.32

SOURCE : GOVT. OF KERALA , STASTICS FOR PLANNING , DEPARTMENT OF ECONOMICS AND STATISTICS , THIRUVANANTHAPURAM , 1993, P. 40.

Note : Row 2 to 9 refers to the land area under each head of classification

The yield stagnation in agriculture in Kerala is all-pervasive, including paddy. The observed increase in yield of paddy is not due to any technical change, but to marginal land going out of cultivation. There is thus technological stagnation throughout Kerala's agriculture since the mid-seventies. Farmers have, moreover, resorted to increased mixed cropping to minimise earnings fluctuations from a given acreage. The most important component of any strategy for agricultural development of Kerala is, therefore, to make technical change the main source of growth. Given the intensity of land use, cropping pattern, abolition of intermediation through land reforms, existence of

a network of agricultural research, extension and credit services and above all, the relatively higher level of education among the farming community and their receptiveness to new ideas, Kerala's agriculture seems to have reached a threshold warranting an induced innovation strategy so as to break out of its technical stagnation.⁴⁶

IRRIGATION :

Only about 15 per cent of the net sown area at 22.47 lakh ha was irrigated through various sources as against 31 per cent of the national average during 1989-'90. The public irrigation system viz, government canals, major/medium irrigation projects, private tanks and wells are mainly concentrated in six districts having a command area of 2.86 lakh hectares, constituting 86 per cent of the total irrigated area in the state. Of the available surface water potential of 8 lakh hectares, 50 per cent of the potential is yet to be exploited. On the ground water front only 15 per cent of the potential at 6.59 lakh hectares is tapped. 148 out of 152 blocks in the state are in the white category having a potential of 7.05 lakh ground water extraction structures. Currently, about 12,000 dugwells and an equal number of pumpsets are supported with credit every year.

Table 4.7 gives the gross area irrigated crop-wise in Kerala from 1980-'81 to 1990-'91 (excluding 1983-'84). As per table 4.7 the total irrigated area in 1990-'91 was 3,84,561 hectares, of which the highest irrigation was given for paddy followed by coconut and banana.

46. Kannan, K.P. and Pushpangadan, K., Dissecting Agricultural Stagnation in Kerala - An Analysis Across Crops, Seasons and Regions, Economic and Political Weekly, Vol.25, No. 35 & 36, September 1-8, 1990, P.1991

TABLE 4.7.**GROSS AREA IRRIGATED - CROP WISE - KERALA**

CROP	AREA IN Ha.									
	1980 - 81	1981 - 82	1982 - 83	1984 - 85	1985 - 86	1986 - 87	1987 - 88	1988 - 89	1989 - 90	1990 - 91
1	2	3	4	5	6	7	8	9	10	11
PADDY	276,863	275,145	280,805	312,860	282,534	293,440	256,446	248,693	243,196	225,063
VEGETABLES	3,879	3,464	3,876	4,519	5,026	4,781	4,676	5,127	5,598	5,766
TUBERS	1,297	442	785	655	735	604	656	587	740	885
COCONUT	60,001	63,183	67,147	70,107	73,133	80,671	91,620	105,857	103,253	104,889
ARECANUT	14,863	14,308	12,983	13,200	14,500	16,669	15,583	20,690	17,428	20,208
CLOVES, NUTMEG & CINNAMON	933	1,005	833	649	767	679	609	570	703	828
OTHER CONDIMENTS & SPICES	997	999	1,291	1,002	1,038	1,066	1,128	1,345	1,376	1,361
BANANA	4,977	4,868	5,636	5,718	6,951	8,025	8,414	9,642	9,706	10,557
BETEL LEAVES	701	597	658	543	582	733	727	652	797	908
SUGAR CANE	854	945	906	1,066	1,287	2,001	1,832	1,889	2,291	2,180
OTHERS	15,481	18,170	15,591	12,834	12,599	11,919	10,987	11,144	11,562	11,916
TOTAL	380,846	383,126	390,511	423,153	399,152	420,588	392,678	406,196	396,650	384,561

SOURCE : GOVERNMENT OF KERALA, STATISTICS FOR PLANNING, DEPARTMENT OF ECONOMICS & STATISTICS, THIRUVANANTHAPURAM, 1993, p. 79

LAND -HOLDING PATTERN

The average size of operational holdings in the state at 0.31 hectares is much lower than the national average of 1.63 hectares. The small and marginal holdings with less than 2 hectares area accounted for 97.28 per cent of total holdings and 67.62 per cent of the total operational area.

Table 4.8 explains the district-wise number and area of total operational holdings during 1990-'91. Table 4.8 shows that the average size of holding was the highest in Idukki (0.83 ha) followed by Wynad (0.77 ha) and Kasargod (0.60 ha). The area in hectares was highest in Idukki followed by Palakkad and Kannur. It was lowest in Alappuzha. The number of operational holdings was highest in Thiruvananthapuram followed by Ernakulam and Thrissur.

TABLE : 4.8.**DISTRICT-WISE NUMBER & AREA OF TOTAL OPERATIONAL HOLDINGS. (1990-91)**

DISTRICTS	NUMBER	% TO TOTAL	AREA (Ha)	% TO TOTAL	AVERAGE SIZE OF HOLDINGS(Ha)
1	2	3	4	5	6
THIRUVANANTHAPURAM	628,868.000	11.60	106,773.000	5.95	0.17
KOLLAM	482,211.000	8.90	79,645.000	4.44	0.17
PATHANAMTHITTA	249,967.000	4.61	89,791.000	5.01	0.36
ALAPPUZHA	403,973.000	7.45	83,974.000	4.68	0.21
KOTTAYAM	348,017.000	6.42	146,533.000	8.17	0.42
IDUKKI	244,830.000	4.52	204,127.000	11.38	0.83
ERNAKULAM	516,296.000	9.53	126,072.000	7.03	0.24
THRISSUR	513,861.000	9.48	124,216.000	6.92	0.24
PALAKKAD	434,439.000	8.02	186,730.000	10.41	0.43
MALAPPURAM	461,029.000	8.51	140,266.000	7.82	0.30
KOZHIKODE	462,603.000	8.54	135,415.000	7.55	0.29
WYANAD	131,736.000	2.43	100,952.000	5.63	0.77
KANNUR	369,760.000	6.82	166,621.000	9.29	0.45
KASARGOD	171,599.000	3.17	102,708.000	5.73	0.60
KERALA STATE	5,419,189.000	100.000	1,793,823.000	100.000	0.33

SOURCE : GOVT. OF KERALA , AGRICULTURAL CENSUS 1990 -91 , DIRECTORATE OF ECONOMICS AND STATISTICS , THIRUVANANTHAPURAM , 1990 - 91.

Banking System

Kerala has always been a relatively better banked state in the country. Even in 1969 the per branch population in Kerala was 41,000 as compared to the corresponding all India figure of 69,000. By 1989 the per branch population in the state declined to 9,000 as against 13,800 for all India. The number of branches of scheduled commercial banks increased from 516 in December 1969 to 2,801 in March 1989. In the case of deposits Kerala has grown from Rs.153 crores in 1969 to Rs.5,667 crores in 1989. Bank credit in Kerala increased from Rs.105 crores in 1969 to Rs.3,701 crores in 1989. Both in terms of per capita deposit (Rs.2,222/-) and per capita credit (Rs.1,451/-) Kerala is better placed compared to the all India figures of Rs.1,830/- and Rs.1,213/- respectively in 1989 (Canara Bank 1989).⁴⁷

47. Sunanda, S., Op.cit., P.14

NABARD's Assistance to Agriculture and Other Allied Activities in Kerala:- (Short-term, Medium-Term and Long-Term; Farm and Non-Farm Sectors)

With a view to supplementing the resources of the co-operative banks and RRBs in meeting the credit needs for agriculture and rural development, NABARD has been providing refinance facilities for the short-term and medium-term (non-schematic) credit requirements of the base level institutions. NABARD also provides long-term loans to the State Government to enable it to contribute to the share capital of the co-operative credit institutions.

The details of short-term credit limits sanctioned by the NABARD to Kerala State Co-operative Bank (on behalf of DCBs) and RRBs for financing seasonal agricultural operations and utilisation thereof during the last five years are explained below. The utilisation of limits sanctioned to DCBs showed a marked fall from 99.7 per cent in 1988-'89 to 47.6 per cent in 1991-'92 and 57 per cent in 1992-'93. The decline is due to the increased level of minimum involvement of DCBs and KSCB. During the five year period from 1988-'89 to 1992-'93 the aggregate minimum involvement for 14 DCBs and the KSCB increased from Rs.81.50 crores and 18.55 crores to Rs.169.66 crores and Rs.40.35 crores respectively. The aggregate minimum involvement for DCBs and KSCB during 1993-'94 have further increased to Rs.205.55 crores and Rs.51.90 crores respectively.⁴⁸ For the year 1992-'93, while 11 DCBs were sanctioned ST - Seasonal Agricultural Operations (SAO) limits, three DCBs, viz, Alappuzha, Ernakulam and Pathanamthitta were not sanctioned any limits due to availability of adequate resources with them to meet their realistic lending programme. Keeping in view the problems of banks in complying with minimum involvement norm

48. NABARD, State Credit Plan - 1994-'95, Op.cit, P.21.

and the difficulties faced by them in availing concessional finance, NABARD has allowed certain relaxations in the minimum involvement for banks in Kerala for the year 1993-'94. Accordingly, out of 14 DCBs in the state, minimum involvement in respect of eight DCBs viz, Ernakulam, Kottayam, Kozhikode, Malappuram, Palakkad, Kollam, Thrissur and Thiruvananthapuram had been frozen at the last year's level and the credit limits of these eight banks have been revised suitably. Of the remaining, four DCBs viz, Kannur, Kasargod, Wyanad and Idukki are eligible for substantial limits even on the basis of the minimum involvement fixed for 1993-'94 and two DCBs (Alappuzha and Pathanamthitta) could not be sanctioned any limit as their current year's lending programme was well within the minimum involvement fixed even at the last year's level. Thus for the current year (1993-'94), limits aggregating Rs.63.29 crores have been sanctioned for 12 DCBs and the SCB has been given a drawable limit of Rs.35 crores.⁴⁹

There were 604 primary handloom weavers co-operative societies in Kerala as on 31 March 1992. Of this, 125 societies were working as factory type units and the remaining as cottage type. The working of Hantex, the apex co-operative society of the primary weavers co-operative societies in Kerala, is far from satisfactory. The sales of Hantex which stood at Rs.8.59 crores during 1988-'89 increased to Rs.10.38 crores during 1989-'90, declined to Rs.8.72 crores during 1990-'91. During 1991-'92 although its sales were higher at Rs.11.88 crores, the stock relation vis a-vis sales was still unsatisfactory as the sales turnover was only 1:1.2 times the average stock level. For the year 1993-'94, a limit of Rs.5.50 crores has been sanctioned on condition that drawals after 31st December 1993 will be subject to completion of audit for the year 1990-'91.⁵⁰

49. Ibid., P.22.

50. Ibid., P.23.

Sanction of medium-term credit limits on behalf of various DCCBs and RRBs has come down over the years and this was in conformity with NABARD's policy to progressively reduce such sporadic lending limits and encourage expansion of credit flow under schematic lending. During the four year period 1988 to 1991, the credit limits sanctioned to DCBs have come down from Rs.0.49 crores in 1988 to Rs.0.12 crores during 1991. During 1992, no limit was sanctioned under MT (non-schematic) to DCCBs. In the case of RRBs, the aggregate limits have declined from Rs.4.50 crores in 1988 and 1989 each to Rs.4.00 crores in 1990-'91 (July-June) and to Rs.3.30 crores during 1991-'92.⁵¹

The agency-wise sanction and disbursements of refinance by NABARD is discussed below. As on March 31, 1992 the SLDBs assisted 31,933 schemes for which a financial assistance of Rs.8,440 crores was given. The commitment by the National Bank to SLDB was Rs.7,372 crores of which Rs.5,652 crores was disbursed. Commercial Banks assisted 56,673 schemes for which it gave a financial assistance of Rs.13,970 crores. The National Bank's commitment of refinance to Commercial Banks was Rs.9,888 crores and disbursement was Rs.7,923 crores. The RRBs assisted a total number of 4,749 schemes for which the financial assistance was Rs.2,523 crores, of which the National Bank's commitment was Rs.2,229 crores and disbursement Rs.2,012 crores. The State Co-operative Banks assisted 2,864 schemes as on March 31, 1992 with a financial assistance of Rs.1,189 crores of which National Bank's commitment was Rs.1,046 crores and disbursement Rs.777 crores.

51. Ibid., PP.26-27.

Table 4.9 gives information on the National Bank's credit as short-term, medium-term and long-term advances. Table 4.9 explains the drawals, repayment and outstanding for short-term, medium-term and long-term purposes during the year 1988-'89 and 1989-'90.

TABLE : 4.9.

NATIONAL BANK'S CREDIT TO CO-OPERATIVES AND STATE GOVERNMENTS

RS. IN CRORES

	1988 - 89			1989 - 90		
	DRAWALS	REPAYMENT	OUT STANDING	DRAWALS	REPAYMENT	OUT STANDING
SHORT-TERM	4,576.000	3,719.000	1,989.000	3,609.000	3,036.000	2,562.000
MEDIUM-TERM	135.000	145.000	329.000	48.000	75.000	302.000
LONG-TERM	45.000	19.000	195.000	30.000	12.000	213.000
TOTALS	4,756.000	3,883.000	2,513.000	3,687.000	3,123.000	3,077.000

SOURCE : RBI, REPORT ON CURRENCY AND FINANCE 1989 - 90.

The National Bank's credit to Co-operatives and State Governments have been explained. The sector and agency-wise progress made in the disbursement of refinance assistance under schematic lending has been discussed below. The refinance assistance under schematic lending have shown an increasing trend in the state. The cumulative refinance disbursement in the state as on 31.03.1993 stood at Rs.729.83 crores which formed about 3.9 per cent of the cumulative disbursement of refinance in the country. The capital formation brought about as a result of NABARD's refinance support has been estimated to be over Rs.1,100 crores in the state. However, during the last six years, the percentage share of commercial banks has come down from 45.11 per cent in 1987-'88 to 35.75 per cent in 1992-'93. The share of KSCADB in cumulative disbursement was 38.15 per cent. However during the last six years the share of the bank was fluctuating. It has increased from 31.88 per cent in 1987-'88 to 40.85

per cent in 1988-'89 and subsequently came down to 37.95 per cent in 1992-'93. The share of KSCB was also fluctuating ranging between 16.19 per cent and 22.45 per cent during 1987-'88 to 1991-'92 and declined to 19.68 per cent in 1992-'93. The share of RRBs ranged between 5.17 per cent and 6.80 per cent during the above period.⁵²

An analysis of the sector-wise disbursement made during the last eight years reveals that Plantation and Horticulture accounted for a major share of refinance ranging between 19.98 per cent and 42 per cent. However the percentage share of refinance under Plantation and Horticulture has been continuously decreasing over the years from 42 per cent in 1985-'86 to only 19.38 per cent in 1992-'93 due to increase in flow of refinance to other sectors like Non-farm Sector, Farm Mechanisation etc. The share of refinance under minor irrigation has been stagnant all through during the above period except the years 1988-'89 and 1989-'90.⁵³

The Non-Farm Sector (NFS) is growing in importance accompanied by an increased flow of refinance. Table 4.10 gives the agency-wise, purpose-wise disbursement under Non-Farm Sector (outside IRDP) during 1991-'92. NABARD's total disbursement for the NFS amounted to Rs.14.993 crores. Out of the total disbursement, Rs.9.161 crores (61.10 per cent) was disbursed through SLDB, Rs.3.2043 crores (21.36 per cent) through SCBs, Rs.2.526 crores (16.85 per cent) through CBs and Rs.0.103 crores (0.69 per cent) through RRBs. From table 4.10 it is clear that out of the total amount disbursed for NFS, the highest amount was disbursed for Agro-Industries which forms 30.17 per cent of the total and the least amount was disbursed for sericulture, 0.07 per cent.

52. Ibid.,pp.18-19

53. Ibid.,PP.19-20.

NABARD'S Sectoral Review of Schematic Refinance Support

National Bank for Agriculture and Rural Development completed a decade of service to the nation on 11 July, 1992. During the first decade of its existence, National Bank has been able to contribute modestly for "promoting integrated development and securing prosperity of rural areas". In the area of rural credit dispensation they have been extending refinance to agriculture and allied activities as well as for promoting small village and tiny industries. The quality of credit planning at the macro level as well as at the field level has also improved considerably during the last decade. There is also new co-ordination between the banks and the promotional agencies like State and Central Government with the district offices of National Bank functioning as the nodal point at the district and block levels.⁵⁴

During the last 10 years, refinance disbursements by National Bank in Kerala totalled to Rs.560 crores, thus helping creation of assets worth over Rs.827 crores in the agriculture sector as well as in the tiny and village industries sectors. Plantation and Horticulture (P & H) crops being the major agriculture activity in the state, the refinance support for investments in P & H accounted for Rs.172.40 crores. Not only has the quantum of refinance in this sector increased considerably during the decade but they have also been encouraging diversification into new areas like orchids and cut flowers, mushrooms and sericulture. New technology is also being promoted through financing of tissue culture for producing better quality seedlings. The refinance support to minor irrigation investments, Rs.129 crores during the decade, now helps digging of 12,000 -14,000 new wells every year and addition of equal

54. NABARD, A Decade of Growth 1982-92, Op cit., P.R.

number of pumpsets. The technical and financial support to banks have also helped in formulating many schemes to promote drip and sprinkler irrigation and area specific schemes like construction of check dams etc.⁵⁵

The refinance disbursements for animal husbandry schemes like dairying and poultry also increased from Rs.0.40 crores during 1982-'83 to Rs.11.40 crores during 1991-'92. Considering the scarcity of good quality of cattle in the state, they have been encouraging investments for rearing of cross bred heifers in the state. Pig and rabbit rearing are also becoming increasingly popular in the state. Development of fisheries has also received the active support of the bank during the last decade. NABARD has been extending refinance support for acquisition of crafts and gears for traditional as well as mechanised fishing operations. Brackish water fish culture is also being promoted vigorously by National Bank. The total refinance support to this sector during the decade amounted to Rs.8 crores.Emphasis is also being given by the Bank in implementing watershed based soil conservation and land development measures by providing liberal refinance support for these activities. About Rs.10 crores have been disbursed as refinance for these activities during the last 10 years.⁵⁶

55. Ibid.,PP. 2-6.

56. Ibid.,PP.7-8.

TABLE : 4.10**AGENCY-WISE , PURPOSE-WISE DISBURSEMENT UNDER NON-FARM SECTOR (OUT SIDE I.R.D.P.) 1991 -92.**

NAME OF ACTIVITY	RS. IN CRORES				GRAND TOTAL
	COMMERCIAL BANKS	S.L.D.Bs.	S.C.Bs.	R.R.Bs.	
HANDI CRAFTS	0.049	0.121	0.160	0.003	0.333
VILLAGE INDUSTRIES	0.280	1.412	0.534	0.008	2.234
LEATHER INDUSTRIES	0.018	0.037	0.011	0.005	0.071
POTTERY	0.052	0.001	0.000	0.000	0.053
PAPER PRODUCTS	0.010	0.005	0.006	0.000	0.021
PRINTING & BOOK BINDING	0.024	0.090	0.169	0.009	0.292
GLASS	0.002	0.001	0.024	0.000	0.027
RUBBER PRODUCTS	0.015	0.296	0.244	0.004	0.559
CONSTRUCTION / BUILDING MATERIALS	0.101	0.694	0.403	0.004	1.202
CHEMICAL & CHEMICAL PRODUCTS	0.024	0.184	0.119	0.002	0.329
PETRO CHEMICALS & PLASTICS	0.061	0.060	0.056	0.000	0.177
GENERAL ENGINEERING	0.029	0.183	0.175	0.007	0.394
ELECTRONICS / AUTO ENGG.	0.079	0.113	0.173	0.007	0.372
SPORTS GOODS	0.002	0.000	0.009	0.000	0.011
STATIONARY	0.016	0.005	0.002	0.000	0.023
AGRI INDUSTRIES	0.212	3.613	0.669	0.030	4.524
TAILORING & READY MADE	0.242	0.542	0.221	0.022	1.027
SERI CULTURE	0.000	0.000	0.010	0.000	0.010
COIR	0.052	0.648	0.083	0.000	0.783
HANDLOOM / POWER LOOM	0.014	0.056	0.014	0.000	0.084
TRIBAL ACTIVITIES	0.014	0.067	0.011	0.000	0.092
MISCELLANEOUS	1.230	1.033	0.110	0.002	2.375
TOTAL	2.526	9.161	3.203	0.103	14.993

SOURCE : NABARD REGIONAL OFFICE, THIRUVANANTHAPURAM.

As the development of small, village, tiny and cottage industries is the only solution for the acute unemployment problem in the state, NABARD has been promoting investment in this sector by extending 100 per cent refinance support to banks on very liberal terms. While the refinance support to this sector covers the whole gambit of small and tiny industries sectors, thrust has been given for setting up of units

in the tiny and village industries sectors which offers the largest scope for creation of employment opportunities. The refinance support of these sectors increased from Rs.4 crores during 1987-'88 to Rs.15 crores during 1991-'92.(Refer Table 4.10) As the marketing of rural produce continues to pose a hindrance to the development of rural industries the bank has diversified its refinance support to finance marketing infrastructure like transport vehicles, mobile sales vans, carts etc. for marketing of rural produce. They have also been involving reputed voluntary agencies in promoting rural industrialisation by extending grant assistance to set up training cum production centres, skill upgradation trainings, artisans guild etc.by these agencies. NABARDs support to government sponsored programmes like IRDP has also increased considerably from Rs.6.44 crores during 1982-'83 to Rs.15.70 crores during 1990-'91 and Rs.14.27 crores during 1991-'92.⁵⁷

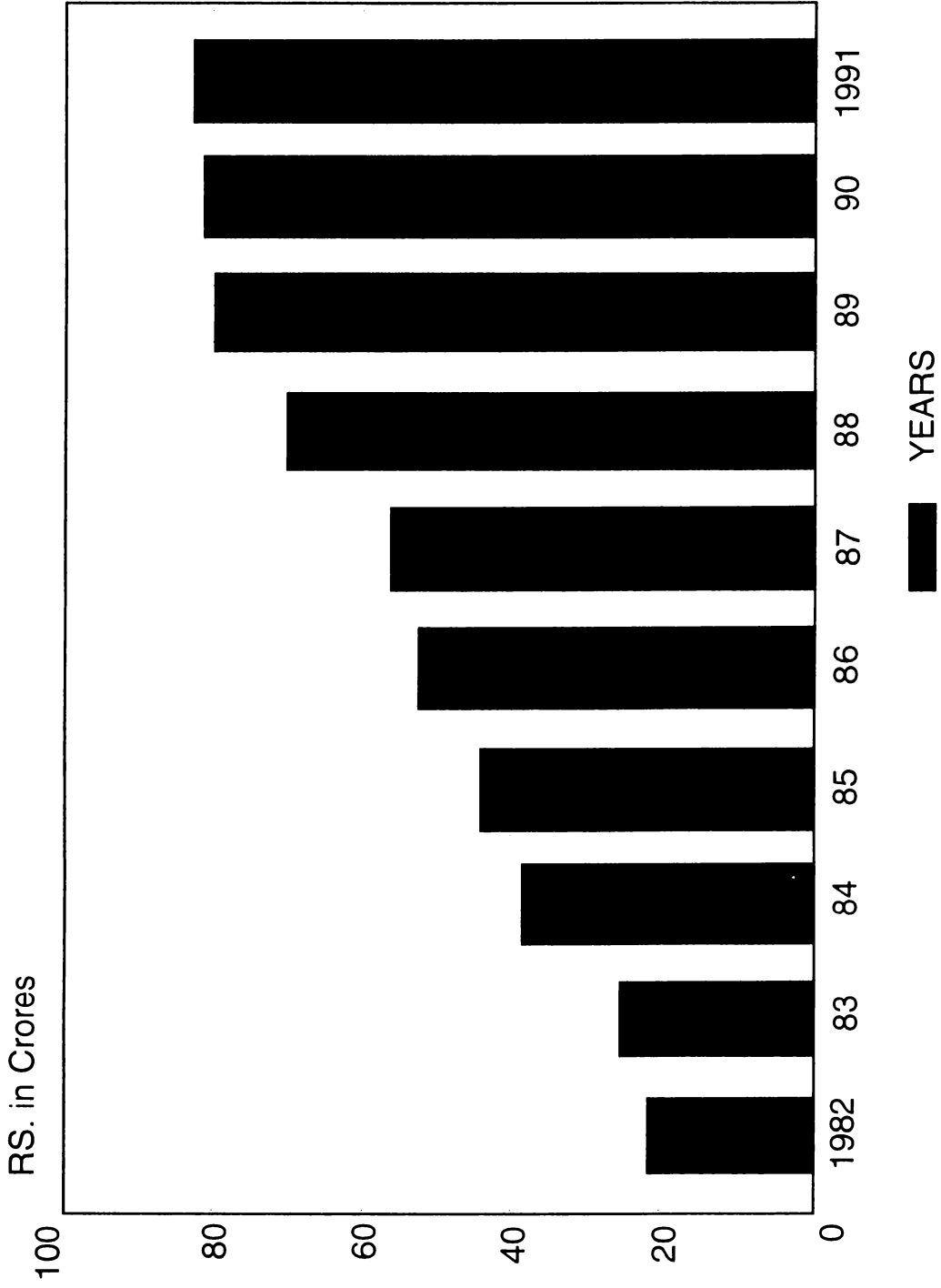
Figure 4.1 explains the refinance disbursements in Kerala over the years 1982-'83 to 1991-'92. In all, the refinance, disbursed amounted to Rs.560 crores during the past decade (1982-'83 to 1991-'92).The National Bank's refinance disbursements increased from Rs.22 crores in 1982-'83, its first year of operations to Rs.85 crores in 1991-'92, the tenth year. Year-wise disbursements can be had from the diagram.

A closer look at the nature of NABARD disbursements can be had from the sectoral distribution of refinance over the years.(Fig. 4.2) The highest disbursement was for Plantation Horticulture (Rs.172.40 crores) followed by IRDP (Rs.129.55 crores) and Minor Irrigation (Rs.128.90 crores). Dairy Development (Rs.31.84 crores), Farm Mechanisation (Rs.12.68 crores), Land Development (Rs.9.45 crores) and Fisheries (Rs.8.00 crores) come next in order. The category under 'others' accounted for Rs 67.18 crores of the total.Figure 4.2 explains the data clearly.

57. Ibid., PP.9-11.

FIG : 4.1

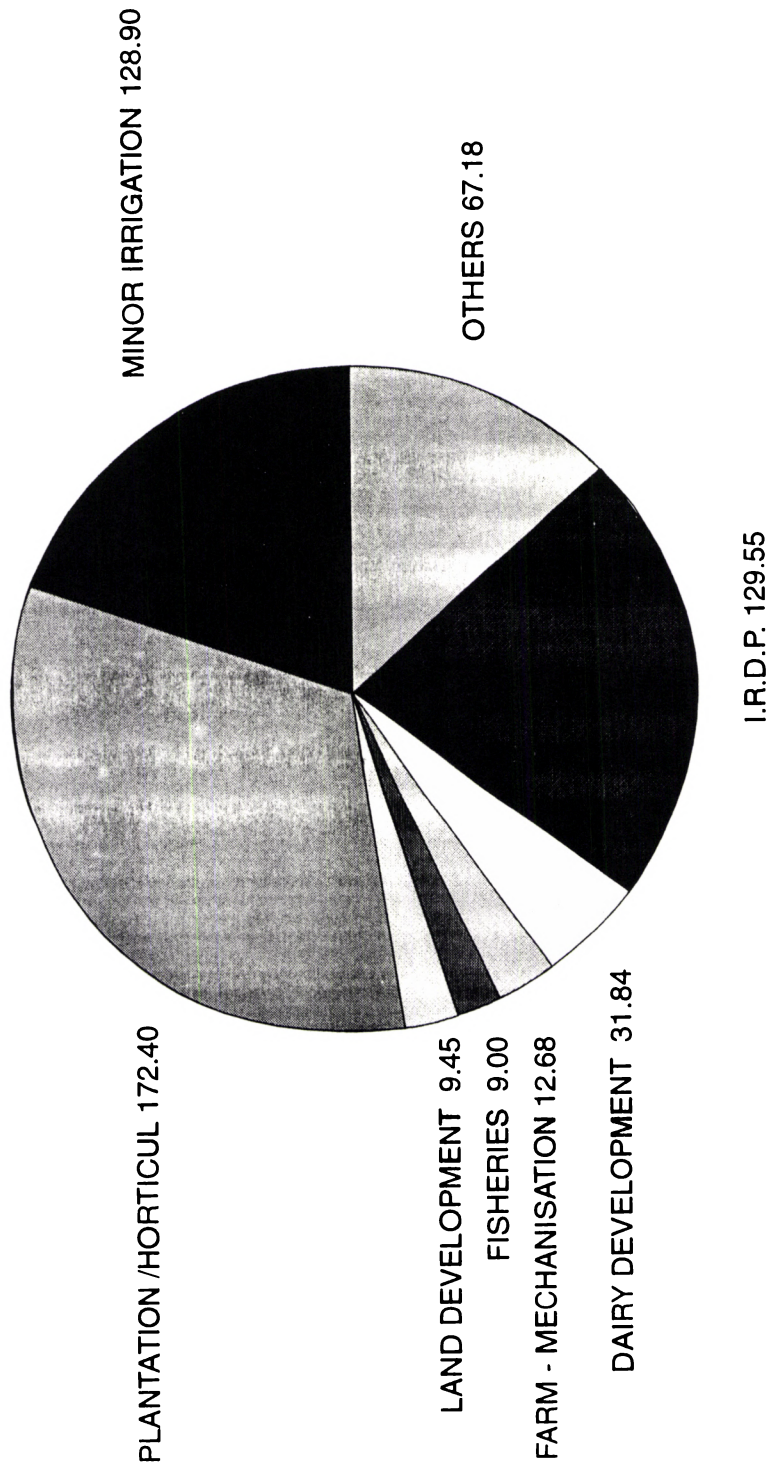
REFINANCE DISBURSEMENTS IN KERALA OVER THE YEARS 1982 - 83 TO 1991 - 92



YEAR	Rs. Cts.
1982 - 83	22
1983 - 84	26
1984 - 85	39
1985 - 86	45
1986 - 87	53
1987 - 88	57
1988 - 89	71
1989 - 90	80
1990 - 91	82
1991 - 92	85

SOURCE : NABARD , A DECADE OF GROWTH 1982 - 1992, THIRUVANTHAPURAM, 1993, P.2

FIG : 4.2
SECTORAL DISTRIBUTION OF NABARD
REFINANCE 1982 - 83 TO 1991 - 92



Rs. IN CRORES

SOURCE : NABARD, A DECADE OF GROWTH 1982 - 92, THIRUVANTHAPURAM 1993 P.2

NABARD has also taken several steps during the last decade to improve the quality of rural credit planning by initiating the process of preparation of potential linked credit plans at the field level and by giving intensive training to branch level functionaries of banks in the credit planning exercise. In order to ensure closer co-ordination among banks on the one hand and between banks and other developmental agencies on the other, NABARD has opened district offices in 12 out of 14 districts in the State and the District Development Managers function as nodal points for credit planning and implementation at the district and block levels.

TABLE : 4.11.

DISTRICT-WISE REFINANCE DISBURSED IN KERALA DURING 1991 - 92

		RS. IN CRORES	
DISTRICTS	REFINANCE DISBURSED	DISTRICTS	REFINANCE DISBURSED
THIRUVANANTHAPURAM	5.960	THRISSUR	7.260
KOLLAM	5.650	PALAKKAD	8.510
PATHANAMTHITTA	4.120	MALAPPURAM	6.620
ALAPPUZHA	4.300	KOZHIKODE	5.690
KOTTAYAM	6.520	WYANAD	2.020
IDUKKI	4.920	KANNUR	8.470
ERNAKULAM	5.320	KASARGOD	9.190
	36.790		47.760
		KERALA STATE	84.550

SOURCE : NABARD REGIONAL OFFICE , THIRUVANANTHAPURAM.

The credit disbursements through refinance from NABARD during 1991-'92 to the various districts of Kerala are shown in table 4.11. Table 4.11 shows that during the year 1991-'92, Kasargod district got the highest refinance (Rs.9.19 crores) followed by Palakkad (Rs.8.51 crores) and Kannur (Rs.8.47crores). Disbursement was low in Alappuzha(Rs4.30 crores) and Pathanamthitta(Rs4.12 crores) and it was least in Wyanad (Rs.2.02 crores).

Realising the significance of beneficiary participation in improving the quality of rural lending, NABARD has been assisting formation of farmer's clubs known as Vikas Volunteer Vahini (VVV) within the area of operation of selected bank branches. The volunteers of these clubs spread the message of development through credit and work in close harmony with the financing bank branches in ensuring quality lending in their area. They also undertake many extension activities like organising cattle shows, vaccination camps, technical advice sessions by specialists etc. in the villages. There are 51 such clubs already functioning in all the districts of the state. The bank has also explored possibilities of involving group savings by people, in meeting their immediate credit needs by forming Self Help Groups (SHGs) and linking these SHGs with banks.⁵⁸

GROWTH TREND AND DISTRIBUTION PATTERN OF RURAL SCHEMATIC REFINANCE IN KERALA

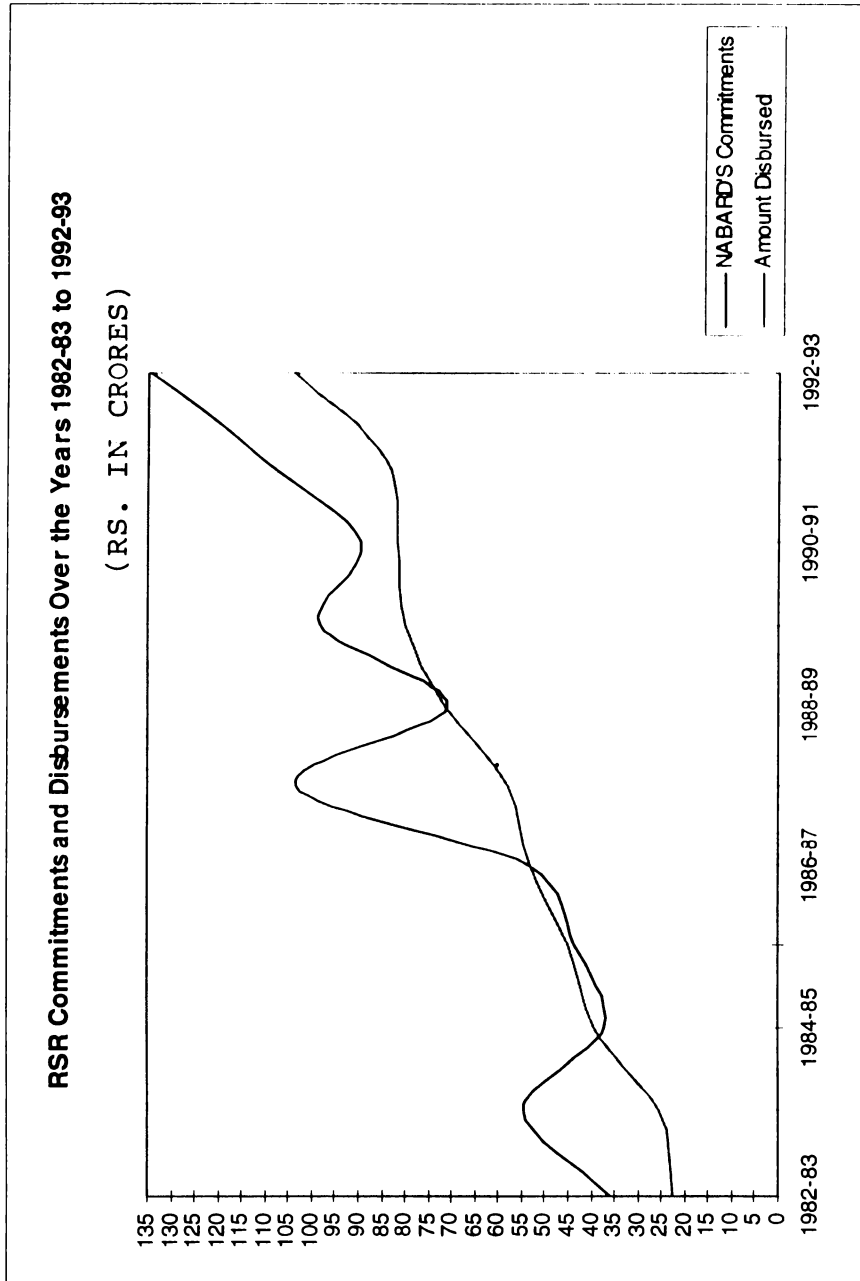
The first part of this section analyses the growth of Rural Schematic Refinance (RSR) in Kerala over the years. The district-wise growth pattern is also studied. Tables 4.12 and 4.13 gives information on these aspects.

Operations of RSR in Kerala 1982-'83 to 1992-'93

Table 4.12 indicates that the number of schemes sanctioned had increased from 178 in 1982-'83 to 285 in 1992-'93. There has also been a steady increase in the quantum of refinance disbursed from 1982-'83 to 1992-'93. The growth trend in Kerala over the years as shown in table 4.12 is depicted by a graph (fig.4.3).The trend indicates that RSR disbursements have been increasing over the years. A comparison of the National Banks Commitments with disbursements indicate the fact

58. Ibid., PP.14-15

FIG : 4.3



that during the period 1982-'83 to 1983-'84 the Commitment - Disbursements gap was high.

TABLE : 4.12.

OPERATIONS OF RSR IN KERALA 1982 - '83 TO 1992 - '93.

RS. IN CRORES					
YEAR	NO. OF SCHEMES	FINANCIAL ASSISTANCE	COMMITMENT	DISBURSEMENT	CUMULATIVE DISBURSEMENT
1982 - 83	178.000	47.88	35.75	22.32	87.36
1983 - 84	251.000	67.86	54.53	25.55	112.91
1984 - 85	178.000	49.43	37.08	39.43	152.34
1985 - 86	288.000	56.66	43.57	44.79	197.13
1986 - 87	337.000	69.09	53.55	53.35	250.48
1987 - 88	505.000	123.10	103.40	58.03	308.51
1988 - 89	287.000	81.20	71.04	71.26	379.77
1989 - 90	411.000	121.29	98.02	80.05	459.82
1990 - 91	347.000	109.73	89.75	81.58	541.40
1991 - 92	577.000	138.29	110.97	84.56	625.96
1992 - 93	285.000	168.96	134.48	103.87	729.83
TOTAL	3,644.000	1,033.49	832.14	664.79	

SOURCE : ANNUAL REPORTS OF NABARD

It then decreased over the period 1984-'85 to 1985-'86 to such an extent that there was negative gap; the gap then increased tremendously during 1987-'88 and then decreased to negative in 1988-'89. From 1989-'90 to 1992-'93 the gap was positive and was increasing at an increasing rate except in the year 1990-'91, where the rate of increase of gap slowed down. Details on the year-wise disbursement of RSR along with the number of schemes sanctioned, total financial assistance provided, the National Banks Commitments and the cumulative disbursements upto the relevant years are provided in the table 4.12. The trend is further explained with the help of frequency curves.(Fig.4.3)

Table 4.13 explains the growth of RSR to the various districts from 1989-'90 to 1992-'93. As per table 4.13 during 1989-'90 Rs.80.04 crores was distributed between various districts, Rs.81.581 crores in 1990-'91, Rs.84.563 crores in 1991-'92 and Rs.103.87 crores

in 1992-'93. Of the Rs.103.87 crores disbursed in 1992-'93, Thiruvananthapuram was allocated Rs.6.481 crores, Kollam Rs.6.069 crores, Pathanamthitta Rs.4.027 crores, Alappuzha Rs.5.697 crores, Kottayam Rs.8.106 crores, Idukki Rs.6.828 crores, Ernakulam Rs.6.841 crores, Thrissur Rs.8.016 crores, Palakkad Rs.11.203 crores, Malappuram Rs.9.088 crores, Kozhikode Rs.8.274 crores, Wyanad Rs.3.397 crores, Kannur Rs.10.644 crores and Kasargod Rs.9.204 crores. The disbursement during 1989-'90, 1990-'91 and 1991-'92 can be explained in a similar manner from the table 4.13.

TABLE : 4.13.

DISTRICT WISE ANALYSIS OF THE THE GROWTH OF RSR 1989 - 90 TO 1992 - 93.
RS. IN CRORES

DISTRICTS	1989 - 90	1990 - 91	1991 - 92	1992 - 93
THIRUVANANTHAPURAM	5.974	6.646	5.964	6.481
KOLLAM	4.997	6.285	5.655	6.069
PATHANAMTHITTA	3.856	3.605	4.117	4.027
ALAPPUZHA	3.730	3.988	4.305	5.697
KOTTAYM	5.338	5.846	6.520	8.106
IDUKKI	5.723	4.510	4.925	6.828
ERNAKULAM	5.455	5.961	5.318	6.841
THRISSUR	8.134	6.306	7.263	8.016
PALAKKAD	5.608	5.878	8.511	11.203
MALAPPURAM	5.857	6.633	6.622	9.088
KOZHICKODU	5.455	6.070	5.677	8.274
WAYANAD	2.869	3.143	2.022	3.397
KANNUR	9.001	7.320	8.472	10.644
KASARGOD	8.045	9.390	9.192	9.204
KERALA TOTAL	80.042	81.581	84.563	103.875

SOURCE : NABARD REGIONAL OFFICE , THIRUVANANTHAPURAM.

Distribution Pattern:

The distribution pattern of RSR analyses refinance across various agencies, various purposes of lending, across districts and also with respect to ground level credit disbursements and the commitment disbursement gap, agency-wise and purpose-wise.

TABLE : 4.14.

AGENCY-WISE ANALYSIS OF SANCTIONS AND DISBURSEMENT UNDER SCHEMATIC LENDING 1983 - '84 TO 1987-88

YEAR	AGENCY	NO. OF SCHEMES	FINANCIAL ASSIST.	RS. IN CRORES	
				COMMITMENTS	DISBURSEMENTS
1983 - 84	C.B	147	38.220	29.240	11.830
	S.L.D.B.	66	20.760	17.900	12.050
	S.C.B.	31	5.640	4.720	1.010
	R.R.B	7	3.240	2.670	0.660
	TOTAL	251	67.860	54.530	25.550
1984 - 85	C.B	86	25.460	17.490	20.390
	S.L.D.B.	58	10.850	9.900	13.010
	S.C.B.	32	9.800	7.530	3.610
	R.R.B	2	3.320	2.160	2.420
	TOTAL	178	49.430	37.080	39.430
1985 - 86	C.B	122	29.160	20.860	18.480
	S.L.D.B.	98	14.940	13.110	19.830
	S.C.B.	63	9.940	7.770	4.110
	R.R.B	5	2.620	1.830	2.370
	TOTAL	288	56.660	43.570	44.790
1986 - 87	C.B	123	33.400	23.060	20.690
	S.L.D.B.	127	24.180	21.140	19.860
	S.C.B.	87	11.120	9.140	8.350
	R.R.B	0	0.390	0.210	4.450
	TOTAL	337	69.090	53.550	53.350
1987 - 88	C.B	201	55.210	44.150	26.180
	S.L.D.B.	196	42.690	37.330	18.500
	S.C.B.	97	19.820	17.120	9.400
	R.R.B	11	5.380	4.800	3.950
	TOTAL	505	123.100	103.400	58.030

TABLE : 4.14. (continued)

AGENCY-WISE ANALYSIS OF SANCTIONS AND DISBURSEMENT UNDER SCHEMATIC LENDING
1988-89 TO 1992 - '93.

RS. IN CRORES					
YEAR	AGENCY	NO. OF SCHEMES	FINANCIAL ASSIST.	COMMITMENTS	DISBURSE
	C.B	102.000	25.320	20.770	25.380
	S.L.D.B.	111.000	38.690	35.130	29.110
1988 - 89	S.C.B.	65.000	12.760	11.200	13.080
	R.R.B	9.000	4.430	3.940	3.690
	TOTAL	287.000	81.200	71.040	71.260
	C.B	145.000	47.980	34.450	26.960
	S.L.D.B.	146.000	40.850	36.140	29.920
1989 - 90	S.C.B.	115.000	26.650	22.230	18.250
	R.R.B	5.000	5.810	5.200	4.920
	TOTAL	411.000	121.290	98.020	80.050
	C.B	154.000	39.780	28.080	31.360
	S.L.D.B.	93.000	34.260	30.860	29.680
1990 - 91	S.C.B.	91.000	30.330	26.190	16.160
	R.R.B	9.000	5.360	4.620	4.380
	TOTAL	347.000	109.730	89.750	81.580
	C.B	238.000	50.730	34.840	31.210
	S.L.D.B.	187.000	48.590	42.400	29.690
1991 - 92	S.C.B.	126.000	30.370	26.130	18.990
	R.R.B	26.000	8.600	7.600	4.670
	TOTAL	577.000	138.29	110.970	84.560
	C.B	132.000	74.210	55.380	37.140
	S.L.D.B.	69.000	50.540	43.970	39.420
1992 - 93	S.C.B.	56.000	34.520	27.180	20.450
	R.R.B	28.000	9.690	7.950	6.860
	TOTAL	285.000	168.960	134.480	103.870

SOURCE : ANNUAL REPORTS OF NABARD

C.B. - COMMERCIAL BANK, S.L.D.B - STATE LAND DEVELOPMENT BANK,
 S.C.B.- STATE CO- OPERATIVE BANK, R.R.B. : REGIONAL RURAL BANK

Table 4.14 analyses the sanctions and disbursements agency-wise during 1982-'83 to 1992-'93. The agencies through which NABARD operates are Commercial Banks (CBs), State Land Development Banks (SLDBs) State Co-operative Banks (SCB) and Regional Rural Banks (RRBs). During 1992-'93 NABARD disbursed RS 103.87 crores of which Rs 37.14 crores was through CB, Rs.39.42 crores through SLDB, Rs.20.45 crores SCB and Rs.6.86 crores through RRB. This shows that the major agencies in NABARD's lending are CB and SLDB. Table 4.14 explains these details for the various years and gives data on other

variables like number of schemes sanctioned agency-wise, total financial assistance and the National Banks commitment agency-wise.

Table 4.15 presents the purpose-wise analysis of the refinance disbursed from 1982-'83 to 1992-'93. The major purposes for which the National Bank disburses refinance are Minor Irrigation including Rural Electrification(MI + REc), Plantation/Horticulture(PH), Land Development (LD), Fisheries (Fis), Farm Mechanisation (FM), Dairy Development (DD) and Integrated Rural Development Programme (IRDP). The category under 'others' include Poultry Farming (PF), Sheep/Goat/Piggery (SGP), Non-Farm Sector (NFS), and Forestry. As per table 4.15 during 1982-'83 the total refinance disbursed in Kerala was Rs.22.32 crores, of which the highest amount of refinance was for the PH sector, Rs.9.80 crores, second for IRDP Rs.5.44 crores and third for MI + REC Rs.5.12 crores. The category under 'others' was allocated Rs.1.00 crores, DD Rs.0.40 crores, FM Rs.0.26 crores, Fis Rs.0.20 crores and LD Rs.0.10 crores. Table 4.15 gives similar information for the rest of the years from 1983-'84 to 1992-'93.

TABLE : 4.15.
PURPOSE WISE ANALYSIS OF DISBURSEMENT OF REFINANCE -1982-'83 TO 1992-'93.

YEAR	RS. IN CRORES								TOTAL
	MI + REC	PH	LD	FIS	FM	DD	IRDP	OTHERS	
1982 - 83	5.120	9.80	0.10	0.20	0.26	0.40	5.44	1.00	22.32
1983 - 84	5.500	11.90	0.40	0.40	1.09	0.80	0.00	5.46	25.55
1984 - 85	9.400	12.20	0.40	0.40	0.76	5.30	10.05	0.93	39.44
1985 - 86	9.700	19.00	0.50	0.50	1.05	1.54	10.47	2.03	44.79
1986 - 87	14.800	18.20	0.15	1.00	1.81	1.81	12.71	2.84	53.32
1987 - 88	15.000	14.50	0.70	0.80	1.12	2.93	16.02	6.02	57.09
1988 - 89	14.500	15.60	1.20	0.90	1.14	2.44	16.57	18.91	71.26
1989 - 90	16.100	26.10	1.60	1.20	1.19	3.93	16.28	13.65	80.05
1990 - 91	19.200	22.60	2.00	1.30	1.70	4.05	15.70	15.03	81.58
1991 - 92	19.600	22.50	2.40	1.36	2.56	5.04	14.27	16.84	84.57
1992 - 93	21.380	20.75	2.17	1.57	4.70	4.62	14.86	33.32	103.37
TOTAL	150.300	193.150	11.620	9.630	17.380	32.860	132.370	116.030	663.34

SOURCE : NABARD REGIONAL OFFICE, THIRUVANANTHAPURAM.

INDEX : LD : LAND DEVELOPMENT, DD : DAIRY DEVELOPMENT, MI : MINOR IRRIGATION
REC : RURAL ELECTRIFICATION, FIS : FISHERIES, FM : FARM MECHANISATION,
IRPD : INTEGRATED RURAL DEVELOPMENT PROGRAMME,
PH:PLANTATION /HORTICULTURE. NOTE : 'OTHERS' INCLUDE NFS ALSO

Table 4.16 presents the agencywise and purposewise disbursement of refinance from 1987-'88 to 1992-'93. For example in 1987-'88 Rs.58.003 crores was disbursed of which Rs.26.179 crores was through Commercial Banks, Rs.18.496 crores through SLDBs, Rs.9.380 crores through SCBs and Rs.3.948 crores through RRBs. Of the 26.179 crores disbursed through CBs, Rs.0.447 crores was for MI, Rs.1.003 crores for storage and market yard (SMY), Rs.2.899 crores for REC, Rs.0.247 crores for LD, Rs.0.300 crores for FM, Rs. 3.337 crores for PH, Rs.1.211 crores for DD, Rs.0.221 crores for IF, Rs.0.307 crores for MF, Rs.0.428 crores for Bio-gas, Rs.0.339 crores for PF, Rs.0.017 crores for SGP, Rs.1.140 crores for N.F.S., Rs.11.227 crores for IRDP, Rs.2.992 crores for NPMA, Rs.0.051 crores for SC/ST and Rs.0.013 crores for other lending. An analysis of SLDB lending during 1987-'88 shows that Rs.18.496 crores was disbursed through it. Of the total amount, Rs.4.828 crores was for MI, Rs.0.208 crores for REC, Rs.0.438 crores for LD, Rs.0.905 crores for FM, Rs.9.253 crores for PH, Rs.0.674 crores for DD, Rs.0.188 crores for IF, Rs.0.047 cores for MF, Rs.0.430 crores for PF, Rs.0.076 crores for SGP, Rs.0.764 crores for NFS, Rs.0.520 crores for NPMA and Rs.0.165 crores for other lending. In the case of SCB lending a large part went for NFS Rs.1.672 crores, the second largest part went for MI Rs.1.622 crores, third for P.H. Rs.1.474 crores and fourth for DD Rs.0.935 crores. SCB allocated Rs.0.008 crores for LD, Rs.0.010 crores for FM, Rs.0.047 crores for IF, Rs.0.113 crores for Biogas, Rs.0.069 crores for PF, Rs.0.065 crores for SGP and Rs.0.658 crores for NPMA. SCB allocated a lions share for IRDP which amounted to Rs.2.683 crores. The Regional Rural Banks (RRBs) which lend a very insignificant part of RSR disbursed Rs.3.948 crores during 1987-'88. It disbursed Rs.0.089 crores for MI, Rs.0.435 crores for PH, Rs.0.093 crores for DD, Rs.0.024 crores for MF, Rs.0.014 crores for Biogas, Rs.0.480 crores for NFS, Rs.2.110 crores for IRDP and Rs.0.701 crores for other categories. An analysis of

TABLE : 4.16.

AGENCY-WISE AND PURPOSE-WISE DISBURSEMENT OF REFINANCE 1987 - '88, 1988 - '89 AND 1989 - '90

YEAR	AGENCY	M.I.	S.M.Y.	S.E.B./ R.E.C	L.D.	F.M.	P.H.	D.D.	I.F.	M.F.	B.I.O.	P.F.	S.G.P.	N.F.S.	I.R.D.P.		N.P.M.A.	S.C./S.T.	OTHERS	TOTAL
															F	N.F.				
1987	C.B.	0.447	1.003	2.899	0.247	0.300	3.337	1.211	0.221	0.307	0.428	0.339	0.017	1.140	3.780	7.447	2.992	0.051	0.013	26.179
	S.L.D.B.	4.828	---	0.208	0.438	0.905	9.253	0.674	0.188	0.047		0.430	0.076	0.764			0.520		0.165	18.496
	S.C.B.	1.622	---	---	0.008	0.010	1.474	0.935	0.047		0.113	0.069	0.065	1.672	1.325	1.358	0.658		0.024	9.380
	R.R.B.	0.089	---	---	---	---	0.435	0.093		0.024	0.014			0.480	0.965	1.145	0.701		0.002	3.948
	TOTAL	6.986	1.003	3.107	0.693	1.215	14.499	2.913	0.456	0.378	0.555	0.838	0.158	4.056	6.070	9.950	4.871	0.051	0.204	58.003
1988	C.B.	0.522	0.557	2.934	0.252	0.258	5.506	0.973	0.226	0.384	0.229	0.317		0.882	4.526	6.730	1.036	0.004	0.039	25.375
	S.L.D.B.	3.938	---	0.204	0.809	0.882	7.619	0.698	0.090	0.095		0.727	0.044	13.782			0.167		0.049	29.104
	S.C.B.	3.444	---	---	0.148	0.004	2.192	1.122	0.017		0.146	0.059	0.079	2.422	1.229	1.446	0.422		0.346	13.076
	R.R.B.	0.061	---	---	---	---	0.296	0.153		0.063	0.009			0.329	1.153	1.469	0.152			3.685
	TOTAL	7.965	0.557	3.138	1.209	1.144	15.613	2.946	0.333	0.542	0.384	1.103	0.123	17.415	6.908	9.645	1.777	0.004	0.434	71.240
1989	C.B.	0.957	0.742	3.344	0.132	0.569	7.584	0.916	0.152	0.427	0.202	0.385	0.015	1.266	3.227	6.316	0.746		0.013	26.993
	S.L.D.B.	5.958	---	0.377	0.787	0.597	14.174	1.393	0.194	0.284		0.679	0.145	5.199			0.033		0.078	29.898
	S.C.B.	3.855	---	---	0.650	0.008	4.033	1.207	0.089		0.087	0.002	0.104	3.955	1.483	2.144	0.281		0.344	18.242
	R.R.B.	0.167	---	---	---	---	0.315	0.412		0.035	0.013			0.443	1.205	1.931	0.385		0.006	4.912
	TOTAL	10.937	0.742	3.721	1.569	1.174	26.106	3.928	0.435	0.746	0.302	1.066	0.264	10.863	5.915	10.391	1.445	0.000	0.441	80.045

RS. IN CRORES

TABLE : 4.16 Continued..

AGENCY WISE AND PURPOSE WISE DISBURSEMENT OF REFINANCE 1990 - '91, 1991 - '92 AND 1992 - '93.

RS. IN CRORES

YEAR	AGENCY	M.I.+ N.P.M.A.	S.M.Y. / R.E.C.	S.E.B.	L.D.	F.M.	P.H.	D.D.	I.F.	M.F.	B.I.O.	P.F.	S.G.P.	N.F.S.	I.R.D.P.		S.C./ S.T.	OTHERS	TOTAL
															F	N.F.			
1990	C.B.	3.161	---	4.071	0.208	0.703	6.989	1.449	0.115	0.637	0.292	0.392	0.005	0.935	12.394	---	---	0.028	31.369
	S.L.D.B.	4.891	---	---	0.965	1.004	11.502	0.930	0.195	0.218	0.009	0.535	0.046	9.378	---	---	---	0.001	29.674
	S.C.B.	5.389	---	---	0.782	---	3.567	1.032	0.056	---	0.083	0.227	0.260	2.704	1.888	---	---	0.169	16.157
	R.R.B.	1.673	---	---	---	---	0.435	0.641	---	0.060	0.010	0.008	---	0.098	1.427	---	---	0.022	4.374
	TOTAL	15.114	0.000	4.071	1.955	1.707	22.493	4.052	0.366	0.915	0.394	1.162	0.311	13.115	15.699	0.000	0.000	0.220	81.574
1991	C.B.	2.812	---	4.547	0.303	1.101	5.880	2.250	0.129	0.807	0.422	0.118	0.033	2.533	10.174	---	---	0.098	31.207
	S.L.D.B.	5.877	---	---	0.935	1.436	10.734	0.769	0.166	0.089	0.025	0.383	0.022	9.166	---	---	---	0.061	29.663
	S.C.B.	5.176	---	---	1.125	---	5.175	1.396	0.017	---	0.125	0.165	0.319	3.204	2.153	---	---	0.131	18.965
	R.R.B.	1.198	---	---	---	---	0.714	0.630	---	0.053	0.020	---	---	0.107	1.944	---	---	0.007	4.673
	TOTAL	15.063	0.000	4.547	2.363	2.537	22.503	5.045	0.312	0.949	0.592	0.666	0.374	15.010	14.271	0.000	0.000	0.297	84.549
1992	C.B.	3.745	---	2.497	0.211	1.661	5.977	1.790	0.391	0.724	0.165	0.236	0.056	9.846	9.828	---	---	0.029	37.156
	S.L.D.B.	4.811	---	---	0.950	2.939	10.402	1.215	0.249	0.033	---	0.619	0.019	17.753	0.019	---	---	0.332	39.407
	S.C.B.	8.203	---	---	0.835	0.077	3.748	1.105	0.029	---	0.031	0.161	0.271	3.670	2.249	---	---	0.125	20.444
	R.R.B.	2.105	---	---	0.176	0.023	0.637	0.509	0.082	0.047	0.011	0.025	0.003	0.434	2.785	---	---	0.016	6.856
	TOTAL	18.864	0.000	2.497	2.172	4.633	20.764	4.619	0.751	0.804	0.207	1.041	0.349	31.703	14.881	0.000	0.000	0.502	103.657

SOURCE : NABARD REGIONAL OFFICE THIRUVANANTHAPURAM
INDEX MI - MINOR IRRIGATION I.F. INLAND FISHERIES P.F. POULTRY FARMING S.G.P. SHEEP/GOAT/PIGGERY.
N.P.M.A. : NATIONAL PROGRAMME FOR MASSIVE ASSISTANCE
LD : LAND DEVELOPMENT SEB/REC: STATE ELECTRICITY BOARD/RURAL ELECTRIFICATION CORPORATION
FM : FARM MECHANISATION BIO : BIO GAS N.F.S. : NON - FARM SECTOR
PH : PLANTATION/ HORTICULTURE IRDP : INTEGRATED RURAL DEVELOPMENT PROGRAMME
DD : DAIRY DEVELOPMENT

the disbursements made in 1987-'88 by all agencies together showed that IRDP took the lions share, Rs.16.020 crores followed by PH Rs.14.499 crores and MI Rs.6.986 crores. Table 4.16 gives information for other years also from 1988-'89 to 1992-'93. Thus the trend and pattern of RSR, agency-wise and purpose-wise can be seen in table 4.16.

District-wise Performance:-

The district-wise performance of RSR in Kerala is analysed below. The various issues studied are the district-wise target, achievement and percentage of achievement, the purpose wise district-wise disbursement, the agency-wise, purpose-wise district disbursement and the district-wise groundlevel credit compared with the refinance disbursed.

TABLE 4.17.

DISTRICT-WISE TARGET, ACHIEVEMENT AND PERCENTAGE OF ACHIEVEMENT - 1992 - '93

RS. IN CRORES				
SL.NO.	DISTRICTS	TARGET	ACHIEVEMENT	% OF ACHIEVEMENT
1	THIRUVANANTHAPURAM	8.88	6.481	72.98
2	KOLLAM	6.15	6.069	98.68
3	PATHANAMTHITTA	5.52	4.028	72.97
4	ALAPPUZHA	5.68	5.697	100.30
5	KOTTAYAM	9.57	8.107	84.71
6	IDUKKI	5.83	6.829	117.14
7	ERNAKULAM	7.88	6.842	86.83
8	THRISSUR	8.43	8.011	95.03
9	PALAKKAD	10.08	11.204	111.15
10	MALAPPURAM	7.51	9.088	121.01
11	KOZHIKODE	6.94	8.274	119.22
12	WYANAD	3.91	3.397	86.88
13	KANNUR	9.32	10.644	114.21
14	KASARGOD	7.53	9.204	122.23
	KERALA STATE	103.23	103.875	100.62

SOURCE : NABARD REGIONAL OFFICE , THIRUVANANTHAPURAM
[A SUM OF RUPEES 3.377 LAKHS WAS DISBURSED TO UNION TERRITORY OF LAKSHA DWEEP]

The district-wise target for the year and the achievements there against as on 31.03.1993 are presented in table 4.17. In seven out of

14 districts in the state, the achievement has exceeded the target. The highest percentage of achievement was recorded in Kasargod and Malappuram districts (122.23 and 121.01 per cent respectively) followed by Kozhikode (119.22 per cent), Idukki (117.14 per cent), Kannur (114.21 per cent) and Palakkad (111.15 per cent). The lowest level of achievement was recorded by Pathanamthitta (72.97 per cent) followed by Thiruvananthapuram (72.98 per cent). Generally the districts in northern Kerala (Malabar region) performed better than central and southern districts.

Purpose-wise District Level Performance

The purposewise disbursements in different districts are presented in table 4.18 and 4.19. Wide variations were noticed among districts in the disbursement of credit to different sectors. Tables 4.18 and 4.19 indicate the purposewise, districtwise disbursement of refinance during 1991-'92 and 1992-'93 respectively. Of Rs.84.484 crores disbursed during 1991-'92, the highest amount was disbursed by Kasargod (Rs.9.192 crores), second highest Palakkad (Rs.8.504 crores) and the third by Kannur (Rs.8.468 crores). This clearly indicates that the northern districts of Kerala have disbursed the lions share of refinance during 1991-'92. Among the central districts of Kerala, Thrissur district disbursed the lions share (Rs.7.257 crores) followed by Kottayam (Rs.6.513 crores) and Ernakulam (Rs.5.311 crores). Among the southern districts Thiruvananthapuram disbursed the highest (Rs.5.957 crores) followed by Kollam (Rs.5.648 crores). In most of the districts the Plantation/Horticulture sector dominated. Of the total disbursements of Rs.22.498 crores under PH, the lions share was disbursed by Kannur (12.7 per cent), second Kottayam, 11.2 per cent, third Palakkad, 10.78 per cent and fourth 9.3 percent by Kasargod. The Non-farm sector which occupied the second large part of NABARD's RSR lending in

TABLE 4.18.

PURPOSE-WISE AND DISTRICT-WISE DISBURSEMENT OF REFINANCE 1991 - '92

RS. IN CRORES

SL. NO.	DIST.	M.I.	N.P.M.A	S.E.B./R.E.C	L.D.	F.M.	P.H.	D.D.	I.F.	M.F.	B.I.O.	P.F.	S.G.P.	I.R.D.P.	N.F.S	OTHERS	TOTAL
1	TVM	0.345	0.502	0.143	0.007	0.025	0.965	0.680		0.175	0.046	0.082	0.019	1.271	1.674	0.023	5.957
2	KLM	0.255	0.426		0.008	0.021	1.605	0.512	0.025	0.236	0.021	0.073	0.116	1.268	1.096	0.046	5.648
3	PTA	0.172	0.150		0.001	0.027	1.841	0.268		0.050	0.026	0.036	0.047	0.783	0.693	0.017	4.111
4	ALP	0.045	0.309		0.116	0.169	0.467	0.247	0.079	0.058	0.012	0.013		1.270	1.490	0.022	4.297
5	KTM	0.278	0.145		0.031	0.087	2.525	0.207	0.045		0.107	0.137	0.039	0.781	2.074	0.057	6.513
6	IDK	0.309	0.693		0.129	0.085	1.546	0.062			0.055	0.026	0.006	0.801	1.209		4.921
7	EKM	0.373	0.248	0.440	0.056	0.305	1.333	0.196	0.147	0.169	0.040	0.105	0.005	1.069	0.816	0.009	5.311
8	TCR	1.184	0.134	1.543	0.031	0.380	0.701	0.244	0.009	0.043	0.047	0.004	0.015	1.414	1.508		7.257
9	PGT	1.508	0.140	0.517	0.092	1.000	2.426	1.018	0.005		0.047	0.082	0.052	0.881	0.634	0.102	8.504
10	MPM	0.169	0.328	0.946	0.041	0.284	1.918	0.476		0.096	0.012	0.011		1.302	1.035		6.618
11	KZD	0.480	0.451	0.115	0.104	0.013	1.261	0.441		0.086	0.042	0.047	0.026	1.423	1.182		5.671
12	WYD	0.145	0.113		0.022	0.133	0.974	0.179			0.023	0.001	0.004	0.324	0.097	0.001	2.016
13	KNR	1.989	0.290	0.545	0.111	0.009	2.850	0.371		0.025	0.086	0.038	0.040	1.344	0.753	0.017	8.468
14	KSGD	3.834	0.036	0.296	1.609	0.014	2.086	0.137		0.006	0.025	0.003		0.393	0.745	0.008	9.192
	TOTAL	11.086	3.965	4.545	2.358	2.552	22.498	5.038	0.310	0.944	0.589	0.658	0.369	14.264	15.006	0.302	84.484

SOURCE : NABARD REGIONAL OFFICE, THIRUVANANTHAPURAM

1991-'92, disbursed the highest amount in Kottayam, 13.82 per cent, followed by Thiruvananthapuram, 11.15 per cent, and third by Thrissur, 10.05 percent. District-wise disbursements of RSR for IRDP totalled to Rs.14.26 crores of which the highest disbursement was made by Kozhikode, second Thrissur and third Kannur. The disbursements made for Minor Irrigation totalled to Rs.11.086 crores of which Kasargod disbursed the highest, 34.6 per cent, second Kannur, 17.9 per cent, followed by Palakkad, 13.60 per cent. The lowest amount was disbursed to Alappuzha, Rs.0.045 crores (0.41 percent), followed by Wyanad 1.31 per cent and Malappuram 1.53 percent. Rs.5.038 crores was disbursed for Dairy Development. Palakkad topped its disbursement, followed by Thiruvananthapuram and Kollam. NABARD disbursed a significant amount of Rs.4.545 crores for Rural Electrification (REC). Rs.3.965 crores was disbursed for NPMA. Palakkad district topped the list for Farm Mechanisation (FM), followed by Thrissur and third Ernakulam. The disbursements for FM were least in Kannur. RSR under LD was topped by Kasargod and the least amount of disbursement was made by Pathanamthitta. Rs.1.254 crores was disbursed under Fisheries Scheme during 1991-'92. The purpose-wise disbursements for the rest of the scheme during 1991-'92 are explained in table 4.18

Table 4.19 explains the purpose-wise, district-wise disbursement of refinance during 1992-'93. Of the total disbursements of Rs.103.87 crores, 30.37 per cent was disbursed for NFS, 15.38 per cent through FRSS, and 14.26 per cent via IRDP. Plantation/Horticulture accounted for 12.40 per cent, whereas MI disbursements amounted to 9.83 per cent. The NFS disbursements were seen to be the highest in two districts, viz, Kozhikode and Thiruvananthapuram, followed by Thrissur and Kottayam. In the PH sector Kasargod stood first, Kollam second and Idukki third. For MI Kannur stood first, Kasargod second and Malappuram

TABLE 4.19

PURPOSE-WISE AND DISTRICT-WISE DISBURSEMENT OF REFINANCE 1992 - '93.

SL.NO	DIST.	RS. IN CRORES														TOTAL		
		M.I.	N.P.M.A	S.E.B. R.E.C	L.D.	F.M.	P.H.	D.D.	I.F.	M.F.	B.I.O.	P.F.	S.G.P.	I.R.D. P.	N.F.S		OTHER S	F.R.S.S.
1	TVM	0.325	0.472	0.086	0.017	0.028	0.804	0.299		0.112	0.019	0.073	0.020	0.883	3.325	0.011		6.474
2	KLM	0.399	0.382		0.011	0.072	1.621	0.311	0.025	0.285	0.008	0.089	0.074	0.948	1.810	0.028		6.063
3	PTA	0.057	0.087		0.001	0.052	0.351	0.133	0.016		0.008	0.001	0.006	0.664	1.123		1.524	4.023
4	ALP	0.058	0.297		0.017	0.044	0.877	0.183	0.115	0.027	0.003	0.099		1.021	2.433	0.010	0.507	5.691
5	KTM	0.169	0.240	0.016	0.013	0.121	1.134	0.119	0.014		0.018	0.002	0.015	0.967	3.066	0.007	2.199	8.100
6	IDK	0.321	0.849	0.011	0.390	0.188	1.573	0.315			0.028	0.013	0.111	0.743	2.280			6.822
7	EKM	0.139	0.205	0.287	0.013	0.396	0.448	0.058	0.128	0.151	0.029	0.002	0.006	1.372	2.220		1.467	6.921
8	TCR	0.170	0.291	0.668	0.005	0.725	0.097	0.172	0.017	0.094	0.020	0.001		1.364	3.101		1.280	8.005
9	PGT	0.143	0.140	0.319	0.017	1.438	0.861	0.163			0.007	0.003	0.010	1.129	1.617		5.350	11.197
10	MPM	0.874	0.484	0.400	0.091	0.840	1.124	0.385		0.058	0.003	0.057		1.820	2.941	0.005		9.082
11	KZD	0.374	0.350	0.140	0.147	0.179	0.228	0.127			0.007	0.011		1.856	3.328		1.521	8.268
12	WYD	0.354	0.130		0.112	0.529	1.110	0.170			0.011	0.013	0.003	0.382	0.578			3.392
13	KNR	4.186	0.251	0.151	0.091	0.027	0.744	0.289	0.012	0.001	0.022	0.012	0.009	1.181	1.516	0.012	2.134	10.638
14	KSGD	2.650	0.147	0.425	0.983	0.060	1.914	0.159		0.043	0.006	0.102		0.493	2.214	0.003		9.199
	TOTAL	10.219	4.325	2.503	1.908	4.699	12.886	2.883	0.327	0.771	0.189	0.478	0.254	14.823	31.552	0.076	15.982	103.875

SOURCE : NABARD REGIONAL OFFICE,
- THIRUVANANTHAPURAM

Note : col. under Frss denotes the disbursements made under Frss (for various purposes including IRDP). Hence the purpose-wise details indicated in table 4.19 above may not tally with what is indicated in the Annual report Statement of 1992-93. However the total disbursement figure of Rs 103.87 crores agrees with what has been indicated here.

third. Pathanamthitta district disbursed the least, followed by Alappuzha. For Farm Mechanisation, Palakkad topped the rank, followed by Malappuram and Thrissur. Kannur disbursed the least for FM, followed by Thiruvananthapuram. Of Rs.2.883 crores disbursed for DD, Malappuram disbursed the highest, followed by Idukki and Kollam. Ernakulam disbursed the least for DD. Thrissur topped in disbursement under REC, followed by Kasargod and Malappuram. For Land Development, the disbursements were topped by Kasargod followed by Idukki and Kozhikode whereas Pathanamthitta and Thrissur contributed a very insignificant amount. The Fisheries sector disbursed Rs.1.098 crores, i.e.Rs.0.327 crores via Industrial Fisheries (IF) and Rs.0.771 crores under Marine Fisheries (MF). Biogas disbursements amounted to Rs.0.189 crores. Ernakulam disbursed the highest amount Rs.0.029 crores. Under Poultry Farming Kasargod disbursed the highest followed by Alappuzha and Kollam. The least was disbursed by Pathanamthitta and Thrissur followed by Kottayam and Ernakulam. Sheep/Goat/Piggery (SGP), which accounted for only 0.25 per cent of total lending routed its share mainly through Idukki district followed by Kollam and Thiruvananthapuram. The category under 'others' accounted for only a very insignificant part of total RSR (0.076 crores).

Table 4.20 explains the commercial bank branch-wise, purpose-wise disbursement of refinance during 1992-'93. Among the various agencies disbursing NABARD's schematic refinance, commercial banks ranked second. Of the total disbursement of Rs.103.87 crores, during 1992-'93, commercial banks disbursed Rs.37.14 crores SLDB Rs.39.42 crores, SCBs Rs.20.45 crores and RRBs Rs.6.86 crores. The table shows the share of the various individual commercial banks in RSR during 1992-'93. The PH sector disbursed Rs.4.180 crores which forms 11.25 per cent of the total disbursements. The Bank of Baroda ranked first with reference to PH sector followed by Federal Bank and Indian

Bank. The purposewise classification shows that IRDP scheme got the highest disbursement which amounted to 26.32 per cent, where SBT topped followed by Canara Bank and SBI. For the Full Refinance Support Scheme (FRSS), SBT disbursed the highest, followed by Canara Bank and SBI. Many of the banks did not disburse any refinance under FRSS. Of the different branches which disbursed for NFS, Canara Bank disbursed the major chunk, followed by Federal Bank and South Indian Bank. Many of the banks did not lend for REC. Of the few, Bank of Baroda disbursed the highest followed by Central Bank of India and Union Bank of India. Other purpose-wise disbursements with reference to the various banks are explained in table 4.20. In sum, it can be seen that of the disbursements made by the various commercial banks in 1992-'93, SBT ranked first followed by Canara Bank and SBI. State Bank of Mysore, Andhra Bank and Bank of Maharashtra contributed a very insignificant part of RSR lending.

Table 4.21 illustrates the performance of SLDB in the field of schematic refinance. Table 4.21 gives a fairly good view of the performance of SLDBs which disbursed an amount of Rs.39.41 crores among different districts and schemes during 1992-'93. The SLDB disbursed the highest in Palakkad followed by Idukki and Kasargod. The least amount was disbursed in Pathanamthitta, followed by Wyanad and Thrissur. The scheme-wise classification of the performance of SLDB shows that the NFS ranked first (45.04 per cent), PH second (26.40 per cent) and MI third (10.49 per cent). The schemes with least disbursements were IRDP (0.048 per cent), SGP (0.048 per cent) and MF (0.083 per cent). A comparison with various districts within each scheme is necessary for further analysis. In MI scheme, Palakkad occupies the foremost rank (27.79 per cent), followed by Kasargod (11.74 per cent) and Thrissur (10.28 per cent). Low disbursements were made by Alappuzha (1.77 per cent), Pathanamthitta (1.99 per cent) and Kollam

TABLE 4.21.

AGENCY-WISE, PURPOSE-WISE AND DISTRICT-WISE DISBURSEMENT OF REFINANCE 1992 - '93.

RS. IN CRORES

AGENCY - STATE LAND
DEVELOPMENT BANK

SL.NO	DISTS.	M.I.	N.P.M.A.	S.E.B. /R.E.C	L.D.	F.M.	P.H.	D.D.	I.F.	M.F.	B.I.O.	P.F.	S.G.P.	I.R.D.P.	N.F.S	OTHERS	TOTAL
1	TVM	0.183	0.072		0.006	0.028	0.471	0.124	0.000	0.000		0.036	0.008	0.019	2.025	0.002	2.974
2	KLM	0.140	0.004		0.013	0.056	0.489	0.088	0.015	0.002		0.047	0.006	0.000	1.241	0.000	2.101
3	PTA	0.082	0.000		0.000	0.045	0.392	0.032	0.000	0.000		0.009	0.000	0.000	0.797	0.000	1.357
4	ALP	0.073	0.142		0.018	0.019	0.224	0.026	0.122	0.029		0.026	0.000	0.000	1.567	0.001	2.247
5	KTM	0.266	0.012		0.002	0.094	0.635	0.025	0.000	0.000		0.028	0.000	0.000	1.654	0.000	2.716
6	IDK	0.179	0.370		0.302	0.188	1.089	0.144	0.000	0.000		0.000	0.000	0.000	1.967	0.000	4.239
7	EKM	0.156	0.006		0.000	0.256	0.437	0.000	0.119	0.000		0.178	0.000	0.000	0.840	0.000	1.992
8	TCR	0.425	0.000		0.004	0.251	0.227	0.000	0.000	0.000		0.000	0.000	0.000	0.822	0.000	1.729
9	PGT	1.149	0.012		0.276	0.874	1.809	0.454	0.000	0.000		0.139	0.000	0.000	0.725	0.271	5.709
10	MPM	0.174	0.003		0.005	0.567	0.484	0.095	0.000	0.002		0.046	0.000	0.000	1.416	0.005	2.797
11	KZD	0.289	0.023		0.018	0.138	0.693	0.188	0.003	0.000		0.028	0.000	0.000	2.050	0.052	3.482
12	WYD	0.148	0.032		0.068	0.426	0.774	0.013	0.000	0.000		0.013	0.000	0.000	0.160	0.000	1.634
13	KNR	0.384	0.000		0.000	0.016	1.384	0.000	0.000	0.000		0.020	0.005	0.000	0.972	0.000	2.781
14	KSGD	0.486	0.000		0.238	0.041	1.294	0.026	0.000	0.000		0.049	0.000	0.000	1.517	0.001	3.652
	TOTAL	4.134	0.676	0.000	0.950	2.999	10.402	1.215	0.259	0.033	0.000	0.619	0.019	0.019	17.753	0.332	39.410

SOURCE : NABARD REGIONAL OFFICE,
THIRUVANANTHAPURAM

(3.40 per cent). For PH, districts with the highest performance were Palakkad (17.39 per cent) followed by Kannur (13.30 per cent) and Kasargod (12.45 per cent). Low disbursements were made by Allappuzha (2.15 per cent) followed by Thrissur and Pathanamthitta. In the case of DD, the districts having highest amount of schematic refinance were Palakkad (37.37 per cent) followed by Kozhikode (15.47 per cent) and Idukki (11.85 per cent). Under FM, Palakkad district disbursed the highest quantum of refinance followed by Malappuram and Wyanad. The least was disbursed in Kannur. SLDBs disbursed Rs.0.619 crores for poultry farming, of which the highest was disbursed in Ernakulam.

Table 4.22 presents the purpose-wise and district-wise disbursement of refinance via SCB. Out of Rs.103.87 crores disbursed as RSR during 1992-'93, SCB disbursed Rs.20.47 crores, which forms 19.69 per cent. The district-wise classification showed much better performance in districts like Kannur (27.68 per cent), Kasargod (16.01 per cent) and Kottayam (9.77 per cent) and low performance was seen in Kozhikode (1.79 per cent), Palakkad (2.71 per cent) and Wyanad (3.09 per cent). The purpose-wise details of disbursements show that the highest amount was disbursed for MI, i.e.Rs.7.349 crores (35.90 per cent). For MI, Kannur disbursed the highest (53.74 per cent) and Allappuzha disbursed the least (0.33 per cent). Under PH, the major part of the amount was disbursed to Kollam (26.09 per cent) followed by Kannur and Kottayam. For DD, SCB disbursed 5.36 per cent of its total disbursements. The amount disbursed for IRDP was Rs.2.243 crores (10.96 per cent), where Kannur disbursed the highest followed by Thrissur and Kasargod. More details can be had from table 4.22.

Table 4.23 explains the operations of Regional Rural Banks (RRB) in RSR. RRBs consist of the South Malabar Gramin Bank (SMGB) and the North Malabar Gramin Bank (NMGB). They function in the districts of

TABLE 4.23.

AGENCY-WISE, PURPOSE-WISE AND DISTRICT-WISE DISBURSEMENT OF REFINANCE 1992 - '93.

AGENCY - REGIONAL
RURAL BANK

RS. IN CRORES

SL.NO.	DISTRICTS	AGENCY	M.I.	N.P.M.A.	S.E.B. / R.E.C	L.D.	F.M.	P.H.	D.D.	I.F.	M.F.	B.I.O.	P.F.	S.G.P.	I.R.D.P.	N.F.S	OTHERS	TOTAL
1	MPM	S.M.G.B.	0.488	0.416		0.065	0.026	0.281	0.225		0.046	0.002	0.008		1.267	0.237		3.061
2	KZD	S.M.G.B.	0.267	0.190		0.078		0.048	0.151	0.082		0.001	0.002		0.832	0.088		1.739
3	WYD	S.M.G.B.		0.019				0.004	0.010						0.046	0.013		0.092
4	WYD	N.M.G.B.	0.030	0.039		0.005		0.052	0.054			0.003			0.167	0.050		0.400
5	KNR	N.M.G.B.	0.147	0.124				0.158	0.056		0.001	0.003	0.013	0.003	0.261	0.033	0.013	0.812
6	KSGD	N.M.G.B.	0.297	0.085		0.027		0.091	0.012						0.209	0.012	0.001	0.734
	TOTAL		1.229	0.873	0.000	0.175	0.026	0.634	0.508	0.082	0.047	0.009	0.023	0.003	2.782	0.433	0.014	6.838

SOURCE : NABARD REGIONAL OFFICE ,
THIRUVANANTHAPURAM

Malappuram, Kozhikode, Wyanad, Kannur and Kasargod. SMGB functions in Malappuram and Kozhikode while NMGB functions in Kannur and Kasargod. Both NMGB and SMGB function in Wyanad. The RRBs disbursed Rs.6.84 crores for these districts which constitute only 6.59 per cent of the total amount disbursed by NABARD. Amongst these districts the highest amount was disbursed to Malappuram (44.75 per cent) followed by Kozhikode and Kannur. The scheme-wise distribution shows that the largest amount was disbursed via IRDP (40.67 per cent), followed by MI and NPMA. The least amount was disbursed via SGP. Under IRDP, Malappuram disbursed the highest followed by Kozhikode and Kannur. For MI the largest amount was disbursed in Malappuram and the least in Wyanad. Under PH a major part was disbursed in Malappuram followed by Kannur and Kasargod. The least was disbursed in Kozhikode. With respect to DD, Malappuram ranked first with 44.29 per cent disbursements and Kasargod disbursed the least (2.36 per cent).

Table 4.24 presents a comparative position between the ground level credit flow and the refinance disbursed between the various districts and also between the schemes during 1992-'93. By 'ground level credit' we mean the total amount of credit disbursed by all institutions put together. But the 'refinance disbursed' is only with reference to NABARD's rural schematic refinance. The data shows that the total ground level credit disbursed for the year was Rs.524.96 crores whereas the total refinance disbursed was Rs.87.85 crores excluding IRSS disbursement. Emakulam district had a fairly large quantum of ground level credit disbursed, (13.54 per cent). It was followed by Kozhikode and Kannur. Of the total refinance disbursed, Kasargod got the highest (10.47 per cent) followed by Malappuram and Kannur. The ground level disbursements were low in Wyanad, Idukki and Malappuram whereas the RSR disbursals were low in

TABLE 4.24.

DISTRICT-WISE GROUND LEVEL CREDIT COMPARED WITH REFINANCE DISBURSED 1992 - '93.

SL.N O.	DISTRICTS	M.I./N.P.M.A.		S.E.B./R.E.C		L.D.		F.M.		P.H.		D.D.		M.F		I.F.			
		G.L.	REF.	G.L.	REF.	G.L.	REF.	G.L.	REF.	G.L.	REF.	G.L.	REF.	G.L.	REF.	G.L.	REF.	G.L.	REF.
1	TVM	1.880	0.799	0.420	0.087	0.530	0.018	0.020	0.028	2.350	0.805	1.690	0.299	0.260	0.112	0.020			
2	KLM	1.150	0.781	0.160		0.810	0.012	0.070	0.073	2.620	1.622	1.420	0.311	0.810	0.286	0.150	0.025		
3	PTA	1.940	0.144	0.240		1.710		0.520	0.053	3.490	0.352	1.460	0.133			0.020	0.016		
4	ALP	0.730	0.355			0.480	0.018	0.220	0.044	1.010	0.878	0.920	0.183	0.510	0.028	0.230	0.115		
5	KTM	2.370	0.409	0.080	0.017	0.490	0.013	0.590	0.121	6.320	1.134	1.570	0.119			0.370	0.014		
6	EKM	1.870	0.258	0.160	0.287	1.090	0.014	0.890	0.396	6.140	0.449	1.720	0.058	1.290	0.152	0.310	0.128		
7	IDK	1.270	1.162		0.011	1.400	0.390	0.320	0.188	6.030	1.574	1.250	0.316			0.040			
8	PGT	3.070	0.283	0.560	0.319	1.200	0.017	2.230	1.439	5.350	0.861	1.830	0.164			0.010			
9	MPM	1.420	1.358	0.840	0.401	0.900	0.091	0.660	0.840	3.810	1.124	1.430	0.386		0.058	0.480			
10	KZD	2.250	0.724	0.450	0.141	0.900	0.148	0.270	0.179	4.800	0.229	1.250	0.127	0.410		0.090			
11	WYD	0.840	0.484	0.040		0.680	0.112	0.130	0.529	4.470	1.111	0.660	0.170						
12	TCR	2.220	0.462	1.260	0.669	0.430	0.005	0.750	0.725	4.220	0.097	0.980	0.173	0.390	0.094	0.550	0.018		
13	KNR	3.830	4.438	0.240	0.151	1.130	0.091	0.280	0.028	4.370	0.745	0.780	0.289	0.320	0.001	0.200	0.012		
14	KSGD	3.090	2.797	0.410	0.425	0.970	0.983	0.660	0.061	4.340	1.914	0.430	0.159	0.170	0.043	0.100			
	TOTAL	27.930	14.454	4.860	2.508	12.720	1.912	7.610	4.704	59.320	12.895	17.390	2.887	4.160	0.774	2.570	0.328		

SOURCE : NABARD REGIONAL
OFFICE, THIRUVANANTHAPURAMINDEX : GL : GROUND LEVEL CREDIT
DISBURSED

REF : REFINANCE DISBURSED

TABLE 4.24 (continued.....)

DISTRICT WISE GROUND LEVEL CREDIT COMPARED WITH REFINANCE DISBURSED 1992 - '93.

RS. IN
CRORES

SL.NO.	DISTRICTS	B.I.O.		P.F.		S.G.P.		I.R.D.P.		N.F.S		OTHERS		TOTAL	
		G.L.	REF.	G.L.	REF.	G.L.	REF.	G.L.	REF.	G.L.	REF.	G.L.	REF.	G.L.	REF.
1	TVM	0.210	0.019	0.570	0.073	0.090	0.021	2.350	0.883	32.600	3.325	0.011	42.990	6.480	
2	KLM	0.080	0.008	0.180	0.089	0.120	0.075	3.000	0.948	36.450	1.810	0.020	47.040	6.068	
3	PTA	0.180	0.008	0.270	0.001	0.380	0.006	1.520	0.664	20.000	1.123	0.060	31.790	2.500	
4	ALP	0.030	0.004	0.470	0.099	0.040		2.920	1.022	19.800	2.433	0.110	27.470	5.190	
5	KTM	0.250	0.018	0.600	0.003	0.190	0.015	2.040	0.967	31.700	3.067	0.190	46.760	5.904	
6	EKM	0.110	0.029	0.670	0.003	0.250	0.006	3.320	1.373	53.200	2.220	0.050	71.070	5.373	
7	IDK	0.320	0.029	0.120	0.014	0.110	0.112	1.400	0.744	6.170	2.280	0.190	18.620	6.820	
8	PGT	0.270	0.008	0.430	0.003	0.230	0.010	2.000	1.121	11.930	1.618	0.200	29.310	5.843	
9	MPM	0.050	0.004	0.150	0.058	0.140		2.990	1.821	8.900	2.941	0.005	21.770	9.087	
10	KZD	0.110	0.008	0.270	0.012	0.390		2.600	1.856	45.700	3.328		59.490	6.752	
11	WYD	0.100	0.012	0.030	0.014	0.160	0.003	0.440	0.383	10.350	0.578		17.900	3.396	
12	TCR	0.060	0.020	0.260	0.002	0.060		2.750	1.364	11.670	3.102		25.600	6.731	
13	KNR	0.250	0.022	0.330	0.013	0.060	0.009	2.400	1.182	35.280	1.517	0.013	49.470	8.511	
14	KSGD	0.100	0.006	0.100	0.102	0.050		0.800	0.494	24.450	2.214	0.010	35.680	9.201	
	TOTAL	2.120	0.195	4.450	0.486	2.270	0.257	30.530	14.822	348.200	31.556	0.830	524.960	87.856	

SOURCE : NABARD REGIONAL OFFICE -
THIRUVANANTHAPURAM

NOTE : THE COL. REFINANCE DISBURSED FOR TABLE 4.24 DOES NOT TALLY WITH THE PURPOSE -WISE REFINANCE DISBURSALS IN THE ANNUAL REPORT STATEMENT FOR 1992 -93. AS THIS TABLE EXCLUDES THE FRSS DISBURSEMENTS WHICH ARE SPREAD OVER VARIOUS PURPOSES. THE ABOVE TABLE DOES NOT TALLY WITH TABLE 4.19 ALSO DUE TO SOME MINOR VARIATIONS BASED ON SCHEMATIC AND NON-SCHEMATIC COMPONENT OF LENDING AND DUE TO ERRORS IN CALCULATION OF THE PURPOSE -WISE DISBURSEMENTS AT THE DISTRICT LEVEL.

Pathanamthitta, Wyanad and Alappuzha. The scheme wise categorisation shows that NFS took the lions share of ground level credit disbursals, which amounted to 66.33 per cent, followed by PH 11.30 per cent and IRDP 5.8 per cent. Under PH sector Kottayam disbursed the highest followed by Idukki and Palakkad for ground level disbursements, whereas for RSR disbursed, Kasargod stood first followed by Kollam and Idukki. For MI the ground level credit disbursements were highest for Kannur followed by Kasargod and Palakkad whereas for RSR it was highest in Kannur, followed by Kasargod and Malappuram. Kannur and Kasargod had RSR disbursements on par with ground level lending. For DD, the ground level disbursements were Rs.17.39 crores, whereas the refinance disbursed amounted to Rs.2.887 crores. Palakkad disbursed the highest part of the ground level credit for DD, which formed 10.52 per cent. The highest refinance disbursals for DD was made by Malappuram district. For IRDP, Rs.30.53 crores were allocated as ground level credit. The total amount of refinance under this scheme was Rs.14.82 crores. In ground level credit disbursals for IRDP Ernakulam stood first (10.87 per cent) and Wyanad ranked last (1.44 per cent). Out of the total amount of refinance disbursed for IRDP, Kozhikode stands first (12.51 per cent) and Wyanad last (2.58 per cent). The coefficient of variation between the ground level credit and rural schematic refinance disbursals for 1992-'93 across the various districts and schemes has been worked out. The coefficient of variation between districts for ground level credit is 40.31 per cent while for refinance disbursed it is 29.24 per cent. With reference to the purpose-wise/scheme-wise variations, it is higher for ground level credit disbursals,(234.5 per cent) when compared to refinance disbursals (140.01 per cent). Thus a comparison between the coefficient of variation of ground level credit and refinance disbursed shows more variations in ground level credit.

Commitment Disbursement Gap

The agency-wise gap in disbursements as on 31 March 1991 is given in table 4.25.

TABLE 4.25.

AGENCY WISE GAP IN DISBURSEMENT AS ON 31 MARCH '91 IN RESPECT OF ONGOING SCHEMES

RS IN CRORES

SL.NO.	AGENCY	AMOUNT COMMITTED	AMOUNT DISBURSED	GAP IN DISBURSEMENT	
				AMOUNT	% OF GAP TO COMMITMENT
1	C.B.	49.97	27.99	21.98	43.99
2	R.R.B.	6.85	3.19	3.66	53.43
3	S.C.B.	39.11	26.25	12.86	32.88
4	S.I.D.B.	89.39	63.67	25.72	28.77
	TOTAL	185.32	121.1	64.22	34.65

SOURCE : NABARD REGIONAL OFFICE , THIRUVANANTHAPURAM

The gap in disbursements amounted to Rs.64.22 crores constituting 34.7 per cent of the total commitments of Rs.185.32 crores upto 31 March 1991. The gap in disbursements was more than 50 per cent in the case of RRBs.

The purpose-wise gap in disbursement as on 31-3-91 is given in table 4.26 Out of the total commitment of Rs.185.32 crores, 63 per cent of the total commitment was made under PH (i.e. 116.83 crores) followed by MI constituting 20 per cent of the total commitment. DD constitutes 7 per cent of the total commitment. The overall gap in disbursement was 34.7 per cent. Except for Fisheries development (FD) and 'Others', the gap in disbursements for all other purposes was less than 50 per cent.

TABLE 4.26.**PURPOSE WISE GAP IN DISBURSMENT UP TO 31 MARCH '91.**

RS. IN CRORES

SL.NO.	PURPOSE	COMMITMENT AMOUNT	DISBURSEMENT AMOUNT	GAP IN DISBURSEMENT	
				GAP TO TOTAL COM. AMOUNT	% OF GAP
1	M.I.	37.82	25.52	12.30	32.52
2	L.D.	7.29	4.63	2.66	36.49
3	P.H.	116.83	76.83	40.00	34.24
4	D.D.	13.73	8.82	4.91	35.76
5	F.D.	5.44	2.46	2.98	54.78
6	P.F.	3.25	2.36	0.89	27.38
7	OTHERS	0.96	0.48	0.48	50.00
	TOTAL	185.32	121.10	64.22	34.65

SOURCE : NABARD REGIONAL OFFICE , THIRUVANANTHAPURAM

Role of Voluntary Organisations and Self - Help Groups on NABARD Operations

Voluntary organisations are considered as those initiated by a group of individuals without external controls and having paid or unpaid workers. The real test for voluntary agencies is the relevance of the programmes they offer to the community or develop within the community. As long as the community feels that the programmes of the organisations are relevant to them, and as long as they recognise the services of the organisations, no agency can be exterminated by the people who they serve, even in situations where funds cease to come in. Voluntary organisations are not too many and are scattered over a wide area and many of them are too small with budgets barely sufficient to manage their programmes. Though they have the will, enthusiasm and capacity to mobilise community resources, most of them also

lack expertise to go about their task. They are also not in a position to employ technical personnel as they cannot afford them or when they employ qualified personnel they are unable to stop the irregular movements of the staff turnover.⁵⁹

Despite the expansion of the formal credit system, the rural poor, particularly marginal farmers, landless labourers, rural artisans, petty traders and others, continue to depend on money lenders to meet their emergent needs as their income earning as well as saving capacity is limited. In order to improve their living conditions and encourage thrift by helping them in meeting their emergent needs and weaning them away from money lenders some of the Non-government Organisations have been promoting small informal groups of rural poor.⁶⁰

The Vikas Volunteer Vahini (VVV) programme, launched by the National Bank in 1983 represents another policy initiative for strengthening the credit delivery system. The National Bank is making efforts to continue, consolidate and stabilise the programme in future also. The VVV programme aimed at educating the borrowers and encouraging their voluntary efforts to have a better rapport with bankers for realising the principles of development through credit and to inculcate in them the repayment ethic. The main thrust of the programme has been towards involving volunteers and establishing 'farmers' clubs comprising exemplary, non-defaulting borrowers to disseminate the philosophy of development through credit. These progressive borrowers act as 'Change Agents' and bring about an

59. Venkat Rao P., "Role of Voluntary Agencies in IRDP", Kurukshetra, Vol.XXXIX, No.10, September, 1987, PP. 11 & 13.

60. NABARD, Studies on Self-Help Groups of the Rural Poor, Bombay, NABARD, 1989, P.54

increased awareness regarding the credit facilities, mode of assistance etc.⁶¹

VVV is the first ever comprehensive strategy to improve the banking habitat, infuse the repayment ethic and ensure adherence to techno-economic criteria in project implementation. The programme provides for the active participation and involvement of Co-operative, Commercial and Regional Rural Banks under the guidance and overall supervision of the NABARD. The VVV programme is an extension-oriented, borrower-involved and specialist-assisted strategy aimed at making qualitative improvements in banking operations climate. The success of the programme will depend on the image of the volunteer and the goodwill and trust he is able to evoke.⁶²

The fifth Assembly of the Asian and Pacific Regional Agricultural Credit Association (APRACA) held at Bangkok in December 1984 had exhorted the agricultural and rural development finance institutions in Asia and Pacific Region to mobilise savings from rural areas with the object of providing loanable funds for agriculture and rural development. It was also noted in the conference that the framework adopted in many countries was such that it made mobilisation of rural savings less attractive for financial institutions for on lending for agriculture and rural development. The experience in some of the member countries of operation of informal Self Help Groups (SHGs) of rural people which promoted savings among members and used these resources for meeting the credit needs of their members were

61. NABARD, National Bank Newsletter, Vol.1, No.7, February, 1991, P.2.

62. Upadhyay, M.N., "Vikas Volunteer Vahini; Improving Banking Climate (VVV)", Agricultural Banker, Vol.7, No.2, April-June, 1984, P.4.

considered to be useful innovations which merited greater study and support. These groups were found to be serving a useful purpose, especially in providing credit support to the poor people who have little access to formal credit institutions.⁶³

The third consultation on the Scheme for Agricultural Credit Development (SACRED) held at Rome in September 1985 called for active promotion of linkages between banking institutions and SHGs as a means of improving the access of low income groups to banking services. The executive committee session of APRACA held in Seoul, Korea in October 1985 approved the holding of a South-East Asian Sub-Regional Workshop to devise ways and means of improving such linkages. The workshop held at Nanjing, China in May 1986 recommended national level consultation and organisation of national surveys of SHGs in collaboration with APRACA and other agencies.⁶⁴

Following the above developments, the Sixth General Assembly of APRACA held at Kathmandu in December 1986 considered a project proposal on 'Promotion of Linkages between Banking institutions and Self - Help Groups in Rural Savings Mobilisations and Credit Delivery to the Rural Poor' Pursuant to this decision, a task force was set up with the Additional Secretary, Ministry of Agriculture, Government of India as Chairman and comprising representatives of other member institutions, viz, Reserve Bank of India, National Bank for Agriculture and Rural Development, Agricultural Finance Corporation etc. In the meeting of the APRACA member institutions in India held in February 1987 at Bombay, it was decided that a study team led by NABARD and comprising representatives of State Bank of India, National Co-operative

63. NABARD, Studies on Self - Help Groups of the Rural Poor, Op.cit., P.1.

Agriculture and Rural Development Bank's Federation, National Federation of State Co-operative Banks Ltd., National Institute of Bank Management and Centre for International Co-operation and Training in Agricultural Banking be constituted to undertake the survey. The task force in its meeting held in May 1986 at Bombay, decided that the survey may cover a sample of about 40 to 50 organisations of varying sizes and representing various activities and regions.⁶⁵

The access of the poor members of the SHGs to formal credit was, in general, negligible. However, a small number among them had borrowed from banks, especially under IRDP for purposes like purchase of milch cattle, bullocks, carts etc. The loans were taken from Regional Rural Banks (RRBs), Commercial Banks and in rare cases from Primary Agricultural Credit Societies (PACS).⁶⁶

The characteristics of the SHG members and their credit needs were such that they did not fit in with the requirements of formal credit institutions. The members were often marginal farmers with very small holdings. Apart from the fact that these people were not in a position to produce documentary evidence of their land ownership or tenancy, many of them happened to be victims of 'benami' transactions carried out in their name in village co-operative societies (PACS) etc. Once declared as defaulters in respect of such benami transactions, they could not obtain 'no dues' certificates for taking any new loan from any formal institution.⁶⁷

64. Ibid.

65. Ibid., PP.1-2.

66. Ibid., P.46.

67. Ibid., PP.51-52.

The SHGs involved mainly in savings and credit activities have evolved a variety of instruments to promote thrift among their members. These groups were evolved in generating a 'common fund' from small thrifts, promoted on a regular basis among the members by curtailing their unproductive expenditure. The SHGs had a system of collecting an initial contribution ranging from Rs.5/- to Rs.10/- per member. These were supplemented generally by regular monthly fixed contributions, which varied from Rs.5/- to Rs.10/- among different groups, as savings.⁶⁸ Hence the importance of Voluntary Organisations and Self - Help Groups on NABARD operations.

68. Ibid., P.54.

CHAPTER 5



PERFORMANCE EVALUATION OF THE
RUBBER PLANTATION DEVELOPMENT
SCHEME



CHAPTER 5

PERFORMANCE EVALUATION OF THE RUBBER PLANTATION DEVELOPMENT SCHEME (RPDS)

The effective utilisation of rubber plantation development loans and the subsequent successful operation of the agricultural activities by the small and marginal farmers depend to a great extent on the provision of follow-up services by the developmental agencies and departments (credit institutions, co-operative societies and agricultural departments) and the access of the beneficiaries to those services. The purpose of financing agricultural development through institutions is not merely extending credit or replacing individual money lenders with institutionalised money lenders, but also to enable agriculture and the farmer to move on to a level of technology that would create a sustained basis for increase in agricultural output, to increase the mandays of employment and to have improved indicators of development in terms of productivity of land, labour and capital.

Based on data collected from sample borrowers who availed bank loan for rubber plantation in selected districts, an attempt is made in this chapter to evaluate the performance of the Rubber Plantation Development Scheme (RPDS). The discussion on this is presented in six sections. The first section deals with the Identification Particulars which also include the socio-economic factors. The procedures adopted by the bank officials to identify the beneficiaries to sanction loans, type of rubber plantation resorted to by farmers, their land utilisation pattern and the demographic characteristics of beneficiaries are presented in the first section. The second section deals with Technical Particulars.

Classification of the selected farmers on the basis of intercropping, gap in credit requirement and the difficulties experienced by farmers in obtaining the loan are explained in this section. The third section explains the Financial Particulars. Loan repayment performance, commitment-disbursement gap, extent of subsidy and nature of security provided are the contents of this section. The fourth section is on Infrastructural Particulars. The selected beneficiaries' access to infrastructural facilities, details regarding follow up action by officials, farmers' knowledge of NABARD refinance and their opinion on direct financing by NABARD are briefly analysed here. The next section discusses Opportunity Cost Particulars, which analyses the net gain derived by the farmers on the basis of their alternative work, income and employment. Analysis regarding the choice preference of the beneficiaries is also carried out in this section. The sixth section analyses the Impact of the scheme. The impact on income, employment and asset position of the sample beneficiaries are evaluated along with details of cost estimates, incremental income investment ratio per hectare and per unit and the nature of NABARD's assistance. Follow-up questions are used in this section in order to counter check data.

SECTION I

IDENTIFICATION PARTICULARS

The distribution of the selected farmers between the districts and lending institutions is given in Table 5.1. A total of 177 beneficiary farmers constitute the beneficiary population under Rubber Plantation Development Scheme. Of the 177 farmers, 89 farmers (50 per cent) were selected from Commercial Banks (CBs) and 88 farmers (50 per cent) from State Land Development Banks (SLDBs). Of the 177 beneficiaries, 48 were selected from Pathanamthitta (PTA) district of which 24 i.e. 50 per cent are from CBs and 50 per cent from SLDBs. Out of 177 beneficiaries in

Ernakulam (EKM) district 52 sample households are selected and they are equally divided between CBs and SLDBs. In Palakkad (PKD) district 77 farmers are selected, of which 39 took refinance from CBs and 38 from SLDBs.

TABLE :5.1.

DISTRICT - WISE & AGENCY - WISE DISTRIBUTION OF BENEFICIARIES

DISTRICT	TYPE	X	%
PATHANAMTHITTA	C.B	24.00	50.00
	S.L.D.B	24.00	50.00
	TOTAL	48.00	100.00
ERNAKULAM	C.B	26.00	50.00
	S.L.D.B	26.00	50.00
	TOTAL	52.00	100.00
PALAKKAD	C.B	39.00	50.65
	S.L.D.B	38.00	49.35
	TOTAL	77.00	100.00
GRAND TOTAL	C.B	89.00	50.65
	S.L.D.B	88.00	49.35
	TOTAL	177.00	100.00

SOURCE : SURVEY DATA

INDEX :C.B.=COMMERCIAL BANK

S.L.D.B. = STATE LAND DEVELOPMENT BANK

X = FREQUENCY

The beneficiaries and non-beneficiaries are classified on the basis of individual and group planting as given in table 5.2. Among the beneficiary community (177), 88.70 per cent are individual planters, while 98.11 per cent among the non-beneficiaries (53) are individual planters. Of the 48 sample beneficiaries in PTA, 83.33 per cent are individual planters and only 16.67 per cent are group planters. Around 93 per cent of the total non-beneficiary community (14) in PTA are individual planters and only 7.14 per cent are group planters. Table 5.2 explains the position of EKM and PKD vis-a-vis these aspects.

TABLE :5.2.

**CLASSIFICATION OF BENEFICIARIES & NON - BENEFICIARIES UNDER
INDIVIDUAL & GROUP PLANTING**

DISTRICT	TYPE OF FARMER		INDIVIDUAL	GROUP	TOTAL
PATHANAMTHITTA		X	40.00	8.00	48.00
	BENEF	%	83.33	16.67	100.00
		X	13.00	1.00	14.00
	NON-BEN	%	92.86	7.14	100.00
ERNAKULAM		X	43.00	9.00	52.00
	BENEF	%	82.69	17.31	100.00
		X	16.00	0.00	16.00
	NON-BEN	%	100.00	0.00	100.00
PALAKKAD		X	74.00	3.00	77.00
	BENEF	%	96.10	3.90	100.00
		X	23.00	0.00	23.00
	NON-BEN	%	100.00	0.00	100.00
GRAND TOTAL		X	157.00	20.00	177.00
	BENEF	%	88.70	11.30	100.00
		X	52.00	1.00	53.00
	NON-BEN	%	98.11	1.89	100.00

SOURCE : SURVEY DATA

INDEX : BENEF = BENEFICIARY
NON - BEN = NON - BENEFICIARY

Table 5.3 classifies farmers on the basis of their selection of various clones. About 90.40 per cent of the total beneficiary farmers selected the clone RR11 105. while only 71.70 per cent of the non-beneficiaries selected this variety. While 8.47 per cent of the beneficiaries selected other clones', 1.13 per cent selected '105 and clonal'. The percentages are 20.75 per cent and 1.89 per cent respectively for the non-beneficiaries. In Pathanamthitta district, 83.33 per cent of the beneficiaries and 64.29 per cent of the non-beneficiaries selected the clone 105. The same trend is also seen in Ernakulam and Palakkad districts, where 94.23 per cent and 92.21 per cent respectively of the selected beneficiaries opted clone 105. A comparison among various districts indicate that the clone, which is acceptable to most farmers is '105'.

TABLE:5.3.**DETAILS OF TYPE OF RUBBER PLANTATION**

DISTRICT	TYPE	RRII 105	CLONAL	BOTH	OTHERS	TOTAL
PATHANAMTHITTA	BLNLF	40.00	0.00	2.00	6.00	48.00
	%	83.33	0.00	4.17	12.50	100.00
	NON-BEN	9.00	3.00	0.00	2.00	14.00
	%	64.29	21.43	0.00	14.28	100.00
ERNAKULAM	BENEF	49.00	0.00	0.00	3.00	52.00
	%	94.23	0.00	0.00	5.77	100.00
	NON-BEN	14.00	0.00	0.00	2.00	16.00
	%	87.50	0.00	0.00	12.50	100.00
PALAKKAD	BENEF	71.00	0.00	0.00	6.00	77.00
	%	92.21	0.00	0.00	7.79	100.00
	NON-BEN	15.00	0.00	1.00	7.00	23.00
	%	65.22	0.00	4.35	30.43	100.00
GRAND TOTAL	BENEF	160.00	0.00	2.00	15.00	177.00
	%	90.40	0.00	1.13	8.47	100.00
	NON-BEN	38.00	3.00	1.00	11.00	53.00
	%	71.70	5.66	1.89	20.75	100.00

SOURCE : SURVEY DATA

(* OTHERS * MEAN PB311 , PB260 , PB235 , RRII203 , RRII118 , GT-1 , RRIM600 , PB217)

Classification of selected farmers on the basis of their landholding size is given in Table 5.4. Out of the 177 beneficiary farmers 25.99 per cent (46) were marginal farmers (MF), 36.16 per cent (64) small farmers (SF), 27.68 per cent (49) medium farmers (MEF) and 10.17 per cent (18) large farmers (LF). In the case of the 53 non-beneficiaries MF and SF accounted for 39.62 per cent each (21 each) and MEF 13.21 per cent (7) and LF 7.55 per cent (4). Of the beneficiaries in Pathanamthitta, most of the farmers are SF 45.83 per cent (22), MF form 22.92 per cent (11) and MEF 18.75 per cent (9). LF forms only 12.50 per cent (6). In EKM, MF accounted for 57.69 per cent (30), SF 26.92 per cent (14) and MEF 13.46 per cent (7). In EKM the LF community forms only 1.92 per cent of the total sample population. In the case of PKD the MEF dominates with 42.86 per cent (33), followed by SF 36.36 per cent (28) and LF 14.29 per cent (11). The MF in the district constitute only an insignificant share of 6.49 per cent (5). A comparison between beneficiaries

and non-beneficiaries can also be had from Table 5.4. It is seen from the table that the size-wise distribution of the sample non-beneficiaries is similar to that of the beneficiaries in PTA and EKM but it is different in PKD.

TABLE:5.4.

SIZE-WISE DISTRIBUTION OF THE SAMPLE HOUSE HOLDS

DISTRICT	TYPE OF FARMER	MARGINAL		SMALL		MEDIUM		LARGE		TOTAL	
		X	%	X	%	X	%	X	%	X	%
PATHANAM-THITTA	BENEF	11.00	22.92	22.00	45.83	9.00	18.75	6.00	12.50	48.00	100.00
	NON-BEN	5.00	35.71	7.00	50.00	2.00	14.29	0.00	0.00	14.00	100.00
ERNA-KULAM	BENEF	30.00	57.69	14.00	26.92	7.00	13.46	1.00	1.92	52.00	100.00
	NON-BEN	11.00	68.75	4.00	25.00	1.00	6.25	0.00	0.00	16.00	100.00
PALAK-KAD	BENEF	5.00	6.49	28.00	36.36	33.00	42.86	11.00	14.29	77.00	100.00
	NON-BEN	5.00	21.74	10.00	43.48	4.00	17.39	4.00	17.39	23.00	100.00
GRAND TOTAL	BENEF	46.00	25.99	64.00	36.16	49.00	27.68	18.00	10.17	177.0	100.00
	NON-BEN	21.00	39.62	21.00	39.62	7.00	13.21	4.00	7.55	53.00	100.00

SOURCE : SURVEY DATA

The classification of the sample beneficiaries and non-beneficiaries on the basis of their land utilisation pattern is shown in Table 5.5. It can be seen from the table that 73.08 per cent (985.40 acres) of the land holdings of the beneficiary community was used for rubber cultivation while it was only 61.82 per cent (120.40 acres) in the case of non-beneficiaries. As far as the beneficiaries are concerned coconut ranked second in total area cultivated i.e. 12.62 per cent (170.14 acres), banana third i.e. 6.49 per cent (87.51 acres), arecanut fourth i.e.2.87 percent (38.73 acres), tapioca 0.37 per cent (4.94 acres)and `others' constitute 4.58 percent (61.72 acres). The percentage of land under rubber cultivation among the selected farmers in the three districts is found to be very high whereas that under tapioca is found to be very low. In EKM around 80.69 per cent (121.16 acres) of the total land holding of the beneficiaries is used for rubber cultivation whereas it is 81.33 per cent (431.69 acres) in PTA and 64.80 per cent (432.55 acres) in PKD. In the case of non-beneficiaries it is 66.09 per cent (31.20 acres), 78.01 per cent (20.75 acres) and 56.59 per cent (68.45 acres) in PTA, EKM and PKD respectively. The district-wise trend follows the same pattern as the

TABLE : 5.5.

DISTRIBUTION OF AREA TO LAND UTILISATION PATTERN OF THE BENEFICIARIES AND NON-BENEFICIARIES

DISTRICT	TYPE OF FARMER	RUBBER	COCONUT	BANANA	ARECANUT	TAPIOCA	OTHERS	(LAND IN ACRES)	
								TOTAL	TOTAL
PATHANAMTHITA	BENEFICIARIES	X	431.69	63.16	10.40	14.99	2.05	8.50	530.79
	NON-BENEFICIARIES	%	81.33	11.90	1.96	2.82	0.39	1.60	100.00
ERNAKULAM	BENEFICIARIES	X	31.20	8.31	2.00	5.00	0.00	0.70	47.21
	NON-BENEFICIARIES	%	66.09	17.60	4.24	10.59	0.00	1.48	100.00
PALAKKAD	BENEFICIARIES	X	121.16	13.70	5.60	0.21	0.00	9.48	150.15
	NON-BENEFICIARIES	%	80.69	9.12	3.73	0.14	0.00	6.31	100.00
GRAND TOTAL	BENEFICIARIES	X	20.75	2.55	0.85	0.75	0.00	1.70	26.60
	NON-BENEFICIARIES	%	78.01	9.59	3.20	2.82	0.00	6.39	100.00
GRAND TOTAL	BENEFICIARIES	X	432.55	93.28	71.51	23.53	2.89	43.74	667.50
	NON-BENEFICIARIES	%	64.80	13.97	10.71	3.53	0.43	6.55	100.00
GRAND TOTAL	BENEFICIARIES	X	68.45	24.02	15.63	2.75	1.00	9.10	120.95
	NON-BENEFICIARIES	%	56.59	19.86	12.92	2.27	0.83	7.52	100.00
GRAND TOTAL	BENEFICIARIES	X	985.40	170.14	87.51	38.73	4.94	61.72	1348.44
	NON-BENEFICIARIES	%	73.08	12.62	6.49	2.87	0.37	4.58	100.00
GRAND TOTAL	BENEFICIARIES	X	120.40	34.88	18.48	8.50	1.00	11.50	194.76
	NON-BENEFICIARIES	%	61.82	17.91	9.49	4.36	0.51	5.90	100.00

SOURCE : SURVEY DATA

(" OTHERS " MEAN PEPPER , GINGER , CARDOMUM , OTHER SPICES , CASHEW NUT)

general trend except for a few differences in PTA. Also the land-use pattern of the beneficiary and non-beneficiary are similar in the respective districts (for more details refer Table 5.25.1).

Table 5.6 gives information on the demographic classification of beneficiaries and non-beneficiaries. The sex - wise distribution of the farmers show that on the whole, majority of the beneficiary loanees (80.23 per cent) and non - beneficiary farmers (90.57 per cent) are males. The district - wise study shows the same trend. With reference to the age - wise distribution, around 52 per cent of the total beneficiary farmers come under the age group of 51 to 75 years and 41.24 per cent between the 26 to 50 years. The same trend can be seen in the non -beneficiaries also. The district - wise analysis shows that majority of the loanees in PTA (64.58 per cent) and EKM (53. 85 per cent) come under the age - group 51 to 75 years. But in PKD majority of the farmers (49.35 per cent) come in the age group 26 to 50 years.

Details on the distribution of sample farmers according to nature of residence, education and occupation is given in Table 5.7. Out of the total beneficiary farmers (177) 20.34 per cent are non-resident Indians. Their district-wise percentages are 35.42 in PTA, 7.69 in EKM and 19.48 in PKD. With reference to the education of farmers, the general analysis shows that the percentage of beneficiary farmers having primary education is 33.33 per cent, those with secondary education 17.51 per cent are illiterate. The district-wise comparison shows that the illiterates are found to be the highest in PKD (23.38 per cent) and the lowest in PTA (10.42 per cent). With reference to the non - beneficiaries, majority of them (43.40 per cent) had secondary education. More details on the district - wise education pattern can be had from the table. A wholistic analysis on the occupation of the farmers show that about 52.54 per cent of the sample farmer are primarily engaged in agricultural activities while the

TABLE : 5.6
DEMOGRAPHIC CLASSIFICATION OF BENEFICIARIES AND NON- BENEFICIARIES

DISTRICT	TYPE OF FARMER	MALE		FEMALE		AGE								TOTAL	
		X	%	X	%	1 TO 25		26 TO 50		51 TO 75		>75		X	%
						X	%	X	%	X	%	X	%		
PATHANAMTHITTA	BENEF	35.00	72.92	13	27.08	0	0	15.00	31.25	31	64.58	2	4.17	48	100
	NON -BENEF	12	85.71	2	14.29	0	0	6	42.86	7	50	1	7.14	14	100
ERNAKULAM	BENEF	45	86.54	7	13.46	1	1.92	20	38.46	28	53.85	3	5.77	52	100
	NON-BENEF	16	100	0	0	0	0	3	18.75	12	75	1	6.25	16	100
PALAKKAD	BENEF	62	80.52	15	19.48	1	1.30	38	49.35	33	42.86	5	6.49	77	100
	NON-BENEF	20	86.96	3	13.04	0	0	12	52.17	11	47.83	0	0	23	100
GRAND TOTAL	BENEF	142	80.23	35	19.77	2	1.13	73	41.24	92	51.98	10	5.65	177	100
	NON-BENEF	48	90.57	5	9.43	0	0	21	39.62	30	56.60	2	3.77	53	100

SOURCE : SURVEY DATA

TABLE : 5.7

DISTRIBUTION OF SAMPLE FARMERS ACCORDING TO NATURE OF RESIDENCE, EDUCATION AND OCCUPATION

DISTRICT	TYPE OF FARMER	NRI				EDUCATION										OCCUPATION				TOTAL	
		YES		NO		I		P		S		C		P.A		P.N.A		X	%		
		X	%	X	%	X	%	X	%	X	%	X	%	X	%	X	%				
PATHANAMTHITTA	BENEF	17	35.42	31	64.58	5	10.42	13	27.08	13	27.08	17	35.42	16	33.33	32	66.67	48	100		
	NON-BENEF	2	14.29	12	85.71	0	0	6	42.86	7	50	1	7.14	3	21.43	11	78.57	14	100		
ERNAKULAM	BENEF	4	7.69	48	92.31	10	19.23	21	40.38	10	19.23	11	21.15	32	61.54	20	38.46	52	100		
	NON-BENEF	-	-	16	100	1	6.25	11	68.75	3	18.75	1	6.25	9	56.25	7	43.75	16	100		
PALAKKAD	BENEF	15	19.48	62	80.52	18	23.38	25	32.47	8	10.39	26	33.77	45	58.44	32	41.56	77	100		
	NON-BENEF	-	-	23	100	4	17.39	2	8.70	13	56.52	4	17.39	21	91.30	2	8.70	23	100		
GRAND TOTAL	BENEF	36	20.32	141	79.66	33	18.64	59	33.33	31	17.51	54	30.51	93	52.54	84	47.45	177	100		
	NON-BENEF	2	3.17	51	97.23	5	9.43	19	35.85	23	43.40	6	11.32	33	62.26	20	37.74	53	100		

SOURCE : SURVEY DATA
 PA = PRIMARILY AGRICULTURE, INDEX : NRI = NON-RESIDENT INDIAN, I = ILLITERATE, P = PRIMARY, S = SECONDARY, C = COLLEGE
 PNA = PRIMARILY NON-AGRICULTURE

rest are engaged in non - agricultural activities. Majority of the farmers in EKM and PKD are engaged in agricultural and allied activities. But in PTA, only 33.33 per cent of the total beneficiary population are engaged primarily in agricultural activities. This could be probably due to the high proportion of NRIs in the district. The occupational pattern of the non-beneficiaries is similar.

SECTION II

TECHNICAL PARTICULARS

This section presents an analysis on the technical particulars of the programme. Table 5.8 gives a comparison between the beneficiaries and non-beneficiaries with and without intercropping in the early stages of rubber plantation. Out of the 177 beneficiaries 115 had intercrop in the early stages of rubber plantation whereas 62 did not. The majority of the beneficiaries in PTA (66.67 per cent) have intercrop and the rest have no intercrop. In EKM and PKD the beneficiaries having intercrop are 80.77 per cent and 53.25 per cent respectively. In the case of non-beneficiaries those who undertake intercropping accounted for 85.71 per cent (12), 81.25 per cent (13) and 56.52 per cent (13) in PTA, EKM and PKD respectively. The average income from intercropping in the early stages of rubber plantation is Rs.3,853.80/- for the 115 beneficiaries whereas it is Rs.2,116.28/- for the 38 non-beneficiaries. The district-wise trend for the beneficiaries and non-beneficiaries follow a similar pattern. The average income from intercropping is seen to be the highest for the beneficiaries of PTA district (Rs.4,606.09).

TABLE :5.8.

**CLASSIFICATION OF BENEFICIARIES AND NON-BENEFICIARIES WITH AND WITHOUT
INTERCROPPING IN THE EARLY STAGES OF RUBBER PLANTATION**

DISTRICT		WITH		AVERAGE	WITHOUT		TOTAL	
		F	%	INCOME IN RS	F	%	F	%
PATHANAMSTHITTA	BENEF.	32.00	66.67	4606.09	16.00	33.33	48.00	100.00
	NON-BENEF.	12.00	85.71	2275.00	2.00	14.29	14.00	100.00
ERNAKULAM	BENEF.	42.00	80.77	3379.69	10.00	19.23	52.00	100.00
	NON-BENEF.	13.00	81.25	835.38	3.00	18.75	16.00	100.00
PALAKKAD	BENEF.	41.00	53.25	3575.61	36.00	46.75	77.00	100.00
	NON-BENEF.	13.00	56.52	3238.46	10.00	43.48	23.00	100.00
GRAND TOTAL	BENEF.	115.00	64.97	3853.80	62.00	35.03	177.00	100.00
	NON-BENEF.	38.00	71.70	2116.28	15.00	28.30	53.00	100.00

SOURCE : SURVEY DATA

The bank-wise distribution of the beneficiaries according to their gap in credit requirements per unit is given in Table 5.9. The table gives a general view on the credit gap with the two agencies. The total credit gap per unit of investment is Rs13135.12. The credit gap per unit of investment is comparatively higher with the CBs, Rs18232.07 (30.21percent) whereas for SLDBs it accounted to only Rs 7980.26 (22.67percent) The district-wise trend of the credit gap in PTA, EKM and PKD also prove that the credit gap is higher with CBs than with SLDBs. The data also show that the credit gap is the highest in PKD (36.22 per cent) which means that the unit cost requirement is mostly insufficient in the district. One reason for this could be the high number of medium and large farmers in PKD compared to other districts. A second major finding with reference to the credit gap is that the National Bank has not been monitoring individual projects at the grassroot level. This is substantiated by data in Table 5.19 and Table 5.36.

Table 5.10 explains the difficulties faced by the farmers to obtain the loan. Out of the 177 farmers, 138 faced difficulties in getting the loan. The table explains that out of the 177 selected farmers, 19 made extra payment to obtain the loan. Among the

TABLE:5.9.

**BANKWISE DISTRIBUTION OF THE BENEFICIARIES
ACCORDING TO THEIR CREDIT GAP PER UNIT OF INVESTMENT**

DISTRICT	BANK	TCI	TCA	OWN FUND	GAP	AMOUNT IN Rs.	
							%
PATHANAMTHITTA	CB	85,441.29	43,084.04	27,544.54	14,812.71		17.34
	SLDB	43,010.17	20,310.29	17,417.29	5,282.59		12.28
	AVERAGE	64,225.73	31,697.17	22,480.92	10,047.65		15.64
ERNAKULAM	CB	25,198.65	15,323.69	615.38	9,259.58		36.75
	SLDB	25,159.54	18,313.50	2,034.31	4,811.73		19.12
	AVERAGE	25,179.10	16,818.60	1,324.85	7,035.66		27.94
PALAKKAD	CB	68,349.77	36,794.23	5,237.59	26,317.95		38.50
	SLDB	37,134.97	22,452.18	2,830.79	11,852.00		31.92
	AVERAGE	52,945.06	29,716.34	4,049.82	19,178.91		36.22
AVERAGE	CB	60,352.78	32,218.07	9,902.64	18,232.07		30.21
	SLDB	35,199.10	20,645.24	6,573.60	7,980.26		22.67
	AVERAGE	47,846.99	26,464.34	8,247.53	13,135.12		27.45

SOURCE : SURVEY DATA

INDEX :

C.B. -- COMMERCIAL BANK , SLDB -- STATE LAND DEVELOPMENT BANK
T.C.I. -- TOTAL COST INCURRED , T.C.A. -- TOTAL COST APPROVED
GAP -- GAP IN REQUIREMENT

TABLE : 5.10.

DETAILS REGARDING DIFFICULTIES TO OBTAIN THE LOAN

DISTRICT		DAYS OF LABOUR LOST								EXTRA PAYMENT		TOTAL
		1 - 2	3 - 4	5 - 6	7 - 8	ABOVE 8	TOTAL	YES	NO			
PATHANAM THITTA	X	18.00	23.00	0.00	4.00	0.00	0.00	45.00	11.00	37.00	48.00	
	%	40.00	51.11	0.00	8.89	0.00	0.00	100.00	22.92	77.08	100.00	
ERNAKULAM	X	26.00	11.00	2.00	0.00	0.00	0.00	39.00	3.00	49.00	52.00	
	%	66.67	28.20	5.13	0.00	0.00	0.00	100.00	5.77	94.23	100.00	
PALAKKAD	X	0.00	0.00	0.00	32.00	22.00	22.00	54.00	5.00	72.00	77.00	
	%	0.00	0.00	0.00	59.26	40.74	40.74	100.00	6.49	93.51	100.00	
GRAND TOTAL	X	44.00	34.00	2.00	36.00	22.00	22.00	138.00	19.00	158.00	177.00	
	%	31.88	24.64	1.45	26.09	15.94	15.94	100.00	10.73	89.27	100.00	

SOURCE : SURVEY DATA

beneficiaries in PTA 22.92 per cent had to pay extra money to obtain the loan, whereas in PKD and EKM the percentage of beneficiaries who were forced to pay extra money to obtain the loan are 6.49 per cent and 5.77 per cent respectively.

SECTION III

FINANCIAL PARTICULARS

This section presents details on the financial particulars like loan repayment, amount of subsidy and nature of security, commitment-disbursement gap etc. Details of loan repayment performance of the sample beneficiaries are given in table 5.11. Around 68.36 per cent (121) of the total beneficiary population have repaid their loans fully, 27.12 per cent (48) partly and 4.52 per cent (8) did not care to repay their loans. The district-wise analysis show that loanees in EKM (88.46 per cent) stand first in repaying loans fully while PKD comes third (54.55 per cent). In PTA 68.76 per cent of the beneficiaries repaid their loans fully. The table also gives explanation on the land size-wise and agency-wise repayment performance. They have been further categorised under fully repaid, partly repaid and unpaid. The average for the three districts together shows that for both the agencies (CB & SLDB) the SF have the highest proportion of fully repaying loanees. With reference to the partly repaid category under CB the SF and MEF had the largest share (36.67 per cent each); while under SLDBs the MEF had the highest share (55.56 per cent). The number of farmers with unpaid loans are higher with SLDBs (5) when compared to CBs (3). The trend with reference to the districts are similar to the general trend except with a few differences in EKM district.

TABLE : 5.11**DETAILS OF LOAN REPAYMENT PERFORMANCE
OF THE SAMPLE HOUSEHOLDS**

DISTRICT	BANK		FULLY REPAID		PARTLY REPAID		UNPAID		TOTAL	
			X	%	X	%	X	%	X	%
PALANI THITTA	CB	MARGINAL	3.00	12.50	2.00	8.33	1.00	4.17	6.00	25.00
		SMALL	4.00	16.67	3.00	12.50	0.00	0.00	7.00	29.17
		MEDIUM	4.00	16.67	3.00	12.50	0.00	0.00	7.00	29.17
		LARGE	3.00	12.50	1.00	8.33	0.00	0.00	4.00	16.66
		TOTAL		14.00	58.34	9.00	37.50	1.00	4.17	24.00
	SLDB	MARGINAL	4.00	16.67	1.00	4.17	0.00	0.00	5.00	20.84
		SMALL	13.00	54.17	1.00	4.17	1.00	4.17	15.00	62.51
		MEDIUM	1.00	4.17	1.00	4.17	0.00	0.00	2.00	8.34
		LARGE	1.00	4.17	1.00	4.17	0.00	0.00	2.00	8.34
	TOTAL		19.00	79.18	4.00	16.68	1.00	4.17	24.00	100.00
DISTRICT TOTAL		33.00	68.76	13.00	27.07	2.00	4.17	48.00	100.00	
ERNAKULAM	CB		X	%	X	%	X	%	X	%
		MARGINAL	13.00	50.00	1.00	3.85	0.00	0.00	14.00	53.85
		SMALL	8.00	30.77	0.00	0.00	0.00	0.00	8.00	30.77
		MEDIUM	3.00	11.54	0.00	0.00	0.00	0.00	3.00	11.54
		LARGE	1.00	3.85	0.00	0.00	0.00	0.00	1.00	3.85
	TOTAL		25.00	96.15	1.00	3.85	0.00	0.00	26.00	100.00
	SLDB	MARGINAL	12.00	46.15	2.00	7.69	0.00	0.00	14.00	53.84
		SMALL	6.00	23.08	0.00	0.00	2.00	7.69	8.00	30.77
		MEDIUM	3.00	11.54	1.00	3.85	0.00	0.00	4.00	15.39
		LARGE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL		21.00	80.77	3.00	11.54	2.00	7.69	26.00	100.00	
DISTRICT TOTAL		46.00	88.46	4.00	7.70	2.00	3.85	52.00	100.00	

TABLE : 5.11.
(contin ued)

DISTRICT	BANK		FULLY REPAID		PARTIY REPAID		UNPAID		TOTAL	
			X	%	X	%	X	%	X	%
PALAKKAD	CB	MARGINAL	1.00	2.56	1.00	2.56	0.00	0.00	2.00	5.12
		SMALL	6.00	15.38	8.00	20.51	0.00	0.00	14.00	35.89
		MEDIUM	4.00	10.26	8.00	20.51	1.00	2.56	13.00	33.33
		LARGE	6.00	15.38	3.00	7.69	1.00	2.56	10.00	25.63
		TOTAL		17.00	43.58	20.00	51.27	2.00	5.12	39.00
	SLDB	MARGINAL	2.00	5.26	1.00	2.63	0.00	0.00	3.00	7.89
		SMALL	13.00	34.21	2.00	5.26	2.00	5.26	17.00	44.73
		MEDIUM	9.00	23.68	8.00	21.09	0.00	0.00	17.00	44.77
		LARGE	1.00	2.63	0.00	0.00	0.00	0.00	1.00	2.63
	TOTAL		25.00	65.78	11.00	28.98	2.00	5.26	38.00	100.00
	DISTRICT TOTAL		42.00	54.55	31.00	40.26	4.00	5.19	77.00	100.00
GRAND TOTAL	CB		X	%	X	%	X	%	X	%
		MARGINAL	17.00	30.36	4.00	13.33	1.00	33.33	22.00	24.72
		SMALL	18.00	32.14	11.00	36.67	0.00	0.00	29.00	32.58
		MEDIUM	11.00	19.64	11.00	36.67	1.00	33.33	23.00	25.84
		LARGE	10.00	17.86	4.00	13.33	1.00	33.33	15.00	16.85
	TOTAL		56.00	100.00	30.00	100.00	3.00	100.00	89.00	100.00
	SLDB	MARGINAL	18.00	27.69	4.00	22.22	0.00	0.00	22.00	25.00
		SMALL	32.00	49.23	3.00	16.67	5.00	100.00	40.00	45.45
		MEDIUM	13.00	20.00	10.00	55.56	0.00	0.00	23.00	26.14
		LARGE	2.00	3.08	1.00	5.56	0.00	0.00	3.00	3.41
TOTAL		65.00	100.00	18.00	100.00	5.00	100.00	88.00	100.00	
DISTRICT TOTAL		121.00	68.36	48.00	27.12	8.00	4.52	177.00	100.00	

SOURCE : SURVEY DATA

Table 5.12 shows the reasons for non-repayment of loans. Around 31.64 per cent of the total sample community (177) did not repay their loans regularly. Out of the 56 defaulters, 46.43 per cent did not repay because of paucity of income. The table clearly indicates that the main reason for overdue is the low income. In EKM it accounted for 66.66 per cent whereas it is 46.67 per cent and 42.86 per cent for PTA and PKD respectively. The other major reasons for non-repayment are cited as high expenses, marriage and expectation of loan write off. The reason that the instalments were inconvenient seem to be of least importance. The district-wise data on these variables are available from table 5.12.

TABLE : 5.12.

REASONS FOR NON- REPAYMENT OF LOAN

DISTRICT		LOW INCOME	HIGH EXP	MARRIAGE	WRITE OFF	INCONVENIENCE	TOTAL
PATHANAM THITTA	X	7.00	3.00	2.00	2.00	1.00	15.00
	%	46.67	20.00	13.33	13.33	6.67	100.00
ERNAKULAM	X	4.00	1.00	1.00	0.00	0.00	6.00
	%	66.66	16.67	16.67	0.00	0.00	100.00
PALAKKAD	X	15.00	5.00	6.00	7.00	2.00	35.00
	%	42.86	14.29	17.14	20.00	5.71	100.00
GRAND TOTAL	X	26.00	9.00	9.00	9.00	3.00	56.00
	%	46.43	16.07	16.07	16.07	5.36	100.00

SOURCE : SURVEY DATA

INDEX : EXP=EXPENDITURE, WRITE OFF =EXPECTING LOAN WRITE OFF,
INCONVENIENCE =INCONVENIENT INSTALMENTS.

The district-wise recovery pattern of the scheme is described in Table 5.13. The amount demanded, collected and balance overdue with the recovery percentage are given in the table. An overall analysis shows that the recovery percentage is high with SLDBs (84.24 per cent) than with CBs (71.36 per cent). The same trend is seen at the district level also. The district-wise comparison shows that the recovery percentage is the highest in PTA (89.46) whereas it is 73.74 in PKD and 72.82 in EKM.

An analysis of the amount of subsidy received and the nature of security given can be had from Table 5.14. Nearly 68.36 per

cent of the total beneficiary population availed subsidy while only 16.98 per cent of the non-beneficiaries received it. In PTA the beneficiaries who received subsidy accounted for 83.33 per cent whereas in PKD and EKM it was 68.83 and 53.85 per cent respectively. The security given for loan was only land and it shows the same trend in the case of all beneficiaries in the three districts.

TABLE : 5.13.**DISTRICT - WISE RECOVERY PATTERN OF THE RUBBER PLANTATION DEVELOPMENT SCHEME**

AMOUNT IN Rs.					
DISTRICT	BANK	DEMAND	COLLECTION	BALANCE	RECOVERY %
PATHANAMTHITTA	CB	481,145.00	419,751.00	61,394.00	87.24
	SLDB	334,047.00	309,514.00	24,533.00	92.66
	TOTAL	815,192.00	729,265.00	85,927.00	89.46
ERNAKULAM	CB	540,542.00	334,325.00	206,217.00	61.85
	SLDB	552,426.00	461,608.00	90,818.00	83.56
	TOTAL	1,092,968.00	795,933.00	297,035.00	72.82
PALAKKAD	CB	783,941.00	534,385.00	249,556.00	68.17
	SLDB	647,324.00	520,995.00	126,329.00	80.48
	TOTAL	1,431,265.00	1,055,380.00	375,885.00	73.74
GRAND TOTAL	CB	1,805,628.00	1,288,461.00	517,167.00	71.36
	SLDB	1,533,797.00	1,292,117.00	241,680.00	84.24
	TOTAL	3,339,425.00	2,580,578.00	758,847.00	77.28

SOURCE : SURVEY DATA

The classification of beneficiaries on the basis of commitment- disbursement gap is given in Table 5.15. The reasons for the gap are also mentioned in the table. The data shows that out of the 177 beneficiaries, 61 beneficiaries had to face commitment-disbursement gap. The gap is higher with SLDB (8.24 per cent) than with CBs (7.61 per cent) but in PTA it is the other way around. The gap percentage is the highest in PTA district (9.93). This is followed by EKM (8.50 per cent) and PKD (6.27 per cent). The reasons for the gap show that it was largely due to the defect in the fixation of the stages of loan distribution. Majority of the beneficiaries (29) do not avail the loan at the later stages as there is no need for money then. This accounted for about 48 per cent of the gap. The situation demands reallocation of stages in such a way as to make available the committed amount when money is most needed. A similar trend can be seen at the district level also. The second

major reason for the gap is the delay on the part of the bank (32.79 per cent). The unwillingness of the borrowers to borrow at a changing higher interest rate is also one among the factors. Table 5.15 provides more details at the district level.

TABLE : 5.14.

AMOUNT OF SUBSIDY AND DETAILS OF SECURITY, DISTRICT-WISE

DISTRICT	TYPE		LAND	NON-LAND	SUBSIDY RECEIVED	AVERAGE Amt. OF SUBSIDY (IN Rs.)
PATHANAMTHITTA		X	48.00	0.00	40.00	2498.63
	BENEF	%	100.00	0.00	83.33	
		X	0.00	0.00	0.00	0.00
	NON-BEN	%	0.00	0.00	0.00	
IRINAKULAM		X	52.00	0.00	28.00	1436.57
	BENEF	%	100.00	0.00	53.85	
		X	0.00	0.00	2.00	2000.00
	NON-BEN	%	0.00	0.00	12.50	
PALAKKAD		X	77.00	0.00	53.00	3673.64
	BENEF	%	100.00	0.00	68.83	
		X	0.00	0.00	7.00	6216.43
	NON-BEN	%	0.00	0.00	30.43	
GRAND TOTAL		X	177.00	0.00	121.00	2536.28
	BENEF	%	100.00	0.00	68.36	
		X	0.00	0.00	9.00	2738.81
	NON-BEN	%	0.00	0.00	16.98	

SOURCE : SURVEY DATA

The district-wise details regarding the time lag between date of application and date of sanction of loan is given in table 5.16. Out of the 177 beneficiaries, 171 beneficiaries (96.61 per cent) experienced delay in receiving loans. Of this 45.61 per cent received loans within one to two months of submission of applications. Only 3.39 per cent of the beneficiaries received loans without any delay. In EKM majority of the farmers (30.61 per cent) experienced a time lag between three to four months. More details can be had from the table.

TABLE :5.15.

**CLASSIFICATION OF THE BENEFICIARIES ON THE BASIS OF THEIR COMMITMENT –
DISBURSEMENT GAP AND THE RELATED PARTICULARS**

DISTRICT	BANK	AMOUNT IN Rs.				REASONS FOR THE GAP							
		TOTAL COMMITMENT AMOUNT	AMOUNT DISBURSED	GAP	GAP %	HIGH INTEREST X	HIGH INT %	NO NEED FOR MONEY X	NO NEED %	DELAY X	DELAY %	TOTAL X	TOTAL %
PATHANAMTHITTA	CB	1,034,017.00	889,593.00	144,424.00	13.97	3.00	25.00	6.00	50.00	3.00	25.00	12.00	100.00
	SLDB	424,266.00	423,897.00	369.00	0.09	1.00	100.00	0.00	0.00	0.00	0.00	1.00	100.00
	TOTAL	1,458,283.00	1,313,490.00	144,793.00	9.93	4.00	30.77	6.00	46.15	3.00	23.08	13.00	100.00
ERNAKULAM	CB	437,990.00	416,524.00	21,466.00	4.90	2.00	40.00	2.00	40.00	1.00	20.00	5.00	100.00
	SLDB	444,121.00	390,602.00	53,519.00	12.05	3.00	37.50	4.00	50.00	1.00	12.50	8.00	100.00
	TOTAL	882,111.00	807,126.00	74,985.00	8.50	5.00	38.46	6.00	46.15	2.00	15.38	13.00	100.00
PALAKKAD	CB	1,434,975.00	1,379,575.00	55,400.00	3.86	1.00	8.33	5.00	41.67	6.00	50.00	12.00	100.00
	SLDB	854,591.00	766,481.00	88,110.00	10.31	2.00	8.70	12.00	52.17	9.00	39.13	23.00	100.00
	TOTAL	2,289,566.00	2,146,056.00	143,510.00	6.27	3.00	8.57	17.00	48.57	15.00	42.86	35.00	100.00
GRAND TOTAL	CB	2,906,982.00	2,685,692.00	221,290.00	7.61	6.00	20.69	13.00	44.83	10.00	34.48	29.00	100.00
	SLDB	1,722,978.00	1,580,980.00	141,998.00	8.24	6.00	18.75	16.00	50.00	10.00	31.25	32.00	100.00
	TOTAL	4,629,960.00	4,266,672.00	363,288.00	7.85	12.00	19.67	29.00	47.54	20.00	32.79	61.00	100.00

SOURCE : SURVEY DATA

TABLE :5.16.**TIME LAG BETWEEN DATE OF APPLICATION AND DATE OF SANCTIONING OF LOAN
(IN MONTHS)**

DISTRICT		1 - 2	2 - 3	3 - 4	4 - 5	> 5	TOTAL
PATHANAMTHITTA	X	30.00	10.00	2.00	0.00	3.00	45.00
	%	66.67	22.22	4.44	0.00	6.67	100.00
ERNAKULAM	X	13.00	11.00	15.00	1.00	9.00	49.00
	%	26.53	22.45	30.61	2.04	18.37	100.00
PALAKKAD	X	35.00	32.00	6.00	1.00	3.00	77.00
	%	45.45	41.56	7.79	1.30	3.90	100.00
GRAND TOTAL	X	78.00	53.00	23.00	2.00	15.00	171.00
	%	45.61	30.99	13.45	1.17	8.77	100.00

SOURCE : SURVEY DATA

SECTION IV**INFRASTRUCTURAL PARTICULARS**

An analysis of farmers' accessibility to infrastructural facilities, their knowledge of direct financing by NABARD and the impact of follow-up action by bank officials are presented in this section. The classification of farmers on the basis of availability of infrastructural particulars is given in Table 5.17. The table shows that 75.71 per cent (134) of the total sample beneficiaries have accessibility to planting materials; 85.31 per cent got necessary training in management of assets and 3.95 per cent got guidance and extension services. In the case of non-beneficiary households, 84.91 per cent have easy availability of planting materials, 81.13 per cent availed training in management of assets and 5.66 per cent received guidance and extension services. The district-wise analysis shows that PTA ranked first with reference to availability of planting materials, guidance and extension services whereas PKD ranked first for availability of training in management of assets.

TABLE 5.17.
CLASSIFICATION OF FARMERS ON THE BASIS OF AVAILABILITY OF INFRASTRUCTURAL PARTICULARS

DISTRICT	TYPE OF FARMER		PLANTING MATERIAL		TRAINING		GUIDANCE		TOTAL
			YES	NO	YES	NO	YES	NO	
PATHANAMTHITTA		X	44.00	4.00	37.00	11.00	3.00	45.00	48.00
	BENEF	%	91.67	8.33	77.08	22.92	6.25	93.75	100.00
		X	10.00	4.00	11.00	3.00	0.00	14.00	14.00
	NON-BEN	%	71.43	28.57	78.57	21.43	0.00	100.00	100.00
ERNAKULAM		X	23.00	29.00	41.00	11.00	3.00	49.00	52.00
	BENEF	%	44.23	55.77	78.85	21.15	5.77	94.23	100.00
		X	13.00	3.00	10.00	6.00	2.00	14.00	16.00
	NON-BEN	%	81.25	18.75	62.50	37.50	12.50	87.50	100.00
PALAKKAD		X	67.00	10.00	73.00	4.00	1.00	76.00	77.00
	BENEF	%	87.01	12.99	94.81	5.19	1.30	98.70	100.00
		X	22.00	1.00	22.00	1.00	1.00	22.00	23.00
	NON-BEN	%	95.65	4.35	95.65	4.35	4.35	95.65	100.00
GRAND TOTAL		X	134.00	43.00	151.00	26.00	7.00	170.00	177.00
	BENEF	%	75.71	24.29	85.31	14.69	3.95	96.05	100.00
		X	45.00	8.00	43.00	10.00	3.00	50.00	53.00
	NON-BEN	%	84.91	15.09	81.13	18.87	5.66	94.34	100.00

SOURCE : SURVEY DATA

Questions were asked to ascertain the beneficiary's knowledge and level of understanding about NABARD refinance. Table 5.18 shows that 37.29 per cent of the 177 sample beneficiaries have borrowed refinance from more than one bank. About 50 per cent of them preferred to do business with SLDB while 28.79 per cent stated that CB is better. Around 21.21 per cent have the same opinion about CB and SLDB. It should be noted in particular that 80.79 per cent of the sample beneficiaries have knowledge about NABARD refinance and the percentage is high in PTA (89.58) whereas in PKD and EKM it is 77.92 and 76.92 respectively.

TABLE :5.18.
CLASSIFICATION OF FARMERS ON THE BASIS OF THEIR EXPERIENCE AND KNOWLEDGE OF NABARD REFINANCE

DISTRICT		MORE THAN ONE BANK	TYPE OF BANK BETTER		REFINANCE KNOW		TOTAL
			C.B	SLDB	YES	NO	
PATHANAMTHITTA	X	16.00	4.00	7.00	43.00	5.00	48.00
	%	33.33	25.00	43.75	89.58	10.42	100.00
ERNAKULAM	X	17.00	6.00	7.00	40.00	12.00	52.00
	%	32.69	35.29	41.18	76.92	23.08	100.00
PALAKKAD	X	33.00	9.00	19.00	60.00	17.00	77.00
	%	42.86	27.27	57.58	77.92	22.08	100.00
GRAND TOTAL	X	66.00	19.00	33.00	143.00	34.00	177.00
	%	37.29	28.79	50.00	80.79	19.21	100.00

SOURCE : SURVEY DATA

INDEX : MORE THAN ONE BANK : FARMERS WHO BORROWED REFINANCE FROM MORE THAN ONE BANK

TABLE : 5.19.
IMPACT OF FOLLOW-UP ACTION BY OFFICIALS

DISTRICT	TYPE		PERIODICITY OF VISIT			IMPACT OF VISIT			TOTAL
			ONCE	OCCA-SIONAL	NEVER	POSITIVE	NEGAT-IVE		
PATHANAMTHITTA	AGENCY	X	22.00	0.00	26.00	X	45.00	3.00	48.00
	VISIT	%	45.83	0.00	54.17	%	93.75	6.25	100.00
	NABARD	X	4.00	0.00	44.00				
	VISIT	%	8.33	0.00	91.67				
ERNAKULAM	AGENCY	X	33.00	5.00	14.00	X	46.00	6.00	52.00
	VISIT	%	63.46	9.62	26.92	%	88.46	11.54	100.00
	NABARD	X	3.00	0.00	49.00				
	VISIT	%	5.77	0.00	94.23				
PALAKKAD	AGENCY	X	75.00	2.00	0.00	X	77.00	0.00	77.00
	VISIT	%	97.40	2.60	0.00	%	100.00	0.00	100.00
	NABARD	X	6.00	0.00	71.00				
	VISIT	%	7.79	0.00	92.21				
GRAND TOTAL	AGENCY	X	130.00	7.00	40.00	X	168.00	9.00	177.00
	VISIT	%	73.45	3.95	22.60	%	94.92	5.08	100.00
	NABARD	X	13.00	0.00	164.00				
	VISIT	%	7.34	0.00	92.66				

SOURCE : SURVEY DATA

NOTE : OCCASIONAL MEANS TWO TO THREE TIMES

From Table 5.19 the periodicity of agency visit and NABARD visit are clear. The officials of the agency bank visited majority of sample beneficiaries (130) once, occasionally visited seven beneficiaries and never visited 40 beneficiaries. The NABARD officials visited only 13 beneficiary farmers (7.34 per cent) and that too only once. There was no visit from NABARD officials in the case of 92.66 per cent of the sample beneficiaries. The impact of visit shows a positive effect on majority of farmers (168).

TABLE :5.20.
FARMERS' OPINION ON DIRECT FINANCING BY NABARD

DISTRICT		YES	NO	NO SUGGESTION	TOTAL
PATHANAMTHITTA	X	35.00	8.00	5.00	48.00
	%	72.91	16.67	10.42	100.00
ERNAKULAM	X	16.00	17.00	19.00	52.00
	%	30.77	32.69	36.54	100.00
PALAKKAD	X	10.00	67.00	0.00	77.00
	%	12.99	87.01	0.00	100.00
GRAND TOTAL	X	61.00	92.00	24.00	177.00
	%	34.46	51.98	13.56	100.00

SOURCE : SURVEY DATA

The data given in Table 5.20 explain the farmers opinion on direct financing by NABARD. The data show that of the 177 sample beneficiaries 61 (34.46 per cent) were in favour of direct financing whereas 92 (51.98 per cent) were against it and 24 farmers (13.56 per cent) have no opinion about it. Only in PTA district majority of the farmers, 72.91 per cent spoke in favour of direct financing.

SECTION V

OPPORTUNITY COST PARTICULARS

This section deals with the net gain derived by the beneficiaries from alternative sources. A detailed information about this can be had from table 5.21. The opportunity cost with reference to alternative nature of work shows that of the 177 sample beneficiaries, rubber plantation would have been possible in the case of 111 (62.71 per cent) even without the loan. For 37.29 per cent (66), the loan was an absolute necessity to go in for rubber plantation. Seventy sample beneficiaries (39.55 per cent) stated that their alternative income would have been lower if the scheme were not implemented. Seventy nine sample beneficiaries (44.63 per cent) have the view that their alternative income would have been the same even if the scheme were not implemented. Twenty eight beneficiaries (15.82 per cent) stated that their alternative income would have been higher if the scheme were not implemented. With respect to alternative employment 39.55 per cent (70 farmers) stated the possibility of lower employment while 51.98 per cent (92 farmers) claimed to have had the same employment. Only a minute share of 8.47 per cent (15) stated the possibility of a higher alternative employment. Table 5.21 explains the opportunity cost particulars in more detail with reference to the three districts. The district-wise trend is more or less the same but with few changes either with respect to alternative work, income or employment in

TABLE :5.21.

NET GAIN DERIVED ON THE BASIS OF ALTERNATIVE WORK, INCOME AND EMPLOYMENT

DISTRICT		F.PDS POSSIBLE	RPDS NOT POSSIBLE	INCOME			EMPLOYMENT			TOTAL
				LOWER	SAME	HIGHER	LOWER	SAME	HIGHER	
PATHANAMTHITTA	X	40.00	8.00	10.00	35.00	3.00	3.00	39.00	6.00	48.00
	%	83.33	16.67	20.83	72.92	6.25	6.25	81.25	12.50	100.00
ERNAKULAM	X	23.00	29.00	16.00	14.00	22.00	25.00	18.00	9.00	52.00
	%	44.23	55.77	30.77	26.92	42.31	48.08	34.62	17.31	100.00
PALAKKAD	X	48.00	29.00	44.00	30.00	3.00	42.00	35.00	0.00	77.00
	%	62.34	37.66	57.14	38.96	3.90	54.55	45.45	0.00	100.00
GRAND TOTAL	X	111.00	66.00	70.00	79.00	28.00	70.00	92.00	15.00	177.00
	%	62.71	37.29	39.55	44.63	15.82	39.55	51.98	8.47	100.00

SOURCE : SURVEY DATA

PIA and PKD. However it has marked differences in EKM district. It is also noteworthy that in PKD the employment level of the beneficiaries did not experience any improvement.

Table 5.22 gives us some idea about the choice preference of the beneficiaries. About 88.14 per cent (156) of the total sample beneficiaries received loans according to their choice while 11.86 per cent (21) did not. The trend is the same with reference to the three districts.

TABLE :5.22.

CHOICE PREFERENCE OF THE BENEFICIARIES

DISTRICT		CONSIDERED	NOT CONSIDERED	TOTAL
PATHANAMTHITTA	X	40.00	8.00	48.00
	%	83.33	16.67	100.00
ERNAKULAM	X	46.00	6.00	52.00
	%	88.46	11.54	100.00
PALAKKAD	X	70.00	7.00	77.00
	%	90.91	9.09	100.00
GRAND TOTAL	X	156.00	21.00	177.00
	%	88.14	11.86	100.00

SOURCE : SURVEY DATA

SECTION VI

THE IMPACT OF THE SCHEME

This section analyses the amount of investment in RPDS, the NABARD component of investment in RPDS, the land- use pattern of the beneficiaries and non-beneficiaries and the impact of the loan via income, employment and asset position of the beneficiary. The comparison between the beneficiary and non-beneficiary is made wherever necessary. Table 5.23.1 gives information on the amount of investment in rubber plantation by the selected beneficiaries. The sum total of investment made in rubber plantation by 177 sample households amounts to Rs.87,55,456/-. Out of this amount, the largest proportion 46.98 per cent was invested by LF, followed by MEF 25.44 per cent, SF 21.11 per cent and only 6.46 per cent by MF. The trend is the same in PKD district while

there are minor changes in PTA. It is interesting to note that the trend is just the opposite in the district of EKM. About 50.38 per cent of the total amount invested is made by PKD followed by PTA (39.12 per cent) and EKM (10.50 per cent).

TABLE :5.23.1.

INVESTMENT IN RPDS BY THE SELECTED BENEFICIARIES

DISTRICT	CATEGORY OF FARMER	AMOUNT (Rs .)	AMOUNT %
PATHANAMTHITTA	MARGINAL	123,456.00	3.60
	SMALL	648,684.00	18.94
	MEDIUM	377,069.00	11.01
	LARGE	2,275,654.00	66.45
	TOTAL	3,424,863.00	100.00
ERNAKULAM	MARGINAL	310,054.00	33.73
	SMALL	298,273.00	32.44
	MEDIUM	235,492.00	25.62
	LARGE	75,510.00	8.21
	TOTAL	919,329.00	100.00
PALAKKAD	MARGINAL	132,508.00	3.00
	SMALL	901,643.00	20.44
	MEDIUM	1,615,121.00	36.61
	LARGE	1,761,992.00	39.94
	TOTAL	4,411,264.00	100.00
GRAND TOTAL	MARGINAL	566,018.00	6.46
	SMALL	1,848,600.00	21.11
	MEDIUM	2,227,682.00	25.44
	LARGE	4,113,156.00	46.98
	TOTAL	8,755,456.00	100.00

SOURCE : SURVEY DATA

The details regarding the amount of investment made by the selected non-beneficiaries is given in table 5.23.2. It is clearly indicated in the table that the total amount of investment in rubber plantation by selected non-beneficiaries (53 farmers) amounts to Rs.15,47,690/- of which the highest proportion 43.36 per cent was made by SF, 22.01 per cent by MEF, 17.58 per cent by LF and 17.05 per cent by MF. The district-wise study shows that 52.39 per cent of the total amount of investment was made by the non-beneficiary

farmers in PKD district whereas it is 29.55 per cent and 18.06 per cent in the case of PTA and EKM respectively. Thus the land size-wise category of investment in PKD, EKM and PTA follows the same pattern with reference to the beneficiary and non-beneficiary except for the fact that there are no large farmers in PTA and EKM.

TABLE: 5.23.2.

INVESTMENT IN RUBBER PLANTATION BY THE SELECTED NON - BENEFICIARIES

DISTRICT	CATEGORY OF FARMER	AMOUNT (Rs.)	AMOUNT %
PATHANAMTHITTA	MARGINAL	68,256.00	14.93
	SMALL	268,592.00	58.73
	MEDIUM	120,470.00	26.34
	LARGE	0.00	0.00
	TOTAL	457,318.00	100.00
ERNAKULAM	MARGINAL	105,208.00	37.63
	SMALL	126,372.00	45.20
	MEDIUM	48,030.00	17.18
	LARGE	0.00	0.00
	TOTAL	279,610.00	100.00
PALAKKAD	MARGINAL	90,445.00	11.16
	SMALL	276,100.00	34.05
	MEDIUM	172,125.00	21.23
	LARGE	272,092.00	33.56
	TOTAL	810,762.00	100.00
GRAND TOTAL	MARGINAL	263,909.00	17.05
	SMALL	671,064.00	43.36
	MEDIUM	340,625.00	22.01
	LARGE	272,092.00	17.58
	TOTAL	1,547,690.00	100.00

SOURCE : SURVEY DATA

Table 5.24 presents estimation of NABARD's component of investment in rubber plantation. The sum total of NABARD component of investment amounts to Rs.42,66,672/-. The total amount of disbursement to LF by NABARD constitutes 31.49 per cent of the total, to SF 29.34 per cent, MEF 27.19 per cent and that to MF 11.97 per cent. The NABARD component of investment is the highest in PKD district (50.30 per cent of the total) and the lowest in EKM (18.92 per cent). In PTA it is 30.78 per cent. Thus the

NABARD investment for the MF, SF, MEF and LF to the various districts is on par with the requisites of the beneficiaries (Ref Table 5.23.1)

TABLE :5.24.

THE NABARD COMPONENT OF INVESTMENT IN RPDS

DISTRICT	CATEGORY OF FARMER	AMOUNT IN Rs.	
		AMOUNT DIBURSED	AMOUNT DIBURSED %
PATHANAMTHITTA	MARGINAL	95,617.00	7.28
	SMALL	392,398.00	29.87
	MEDIUM	225,375.00	17.16
	LARGE	600,100.00	45.69
	TOTAL	1,313,490.00	100.00
ERNAKULAM	MARGINAL	342,403.00	42.42
	SMALL	265,492.00	32.89
	MEDIUM	123,806.00	15.34
	LARGE	75,425.00	9.34
	TOTAL	807,126.00	100.00
PALAKKAD	MARGINAL	72,873.00	3.40
	SMALL	594,015.00	27.68
	MEDIUM	811,001.00	37.79
	LARGE	668,167.00	31.13
	TOTAL	2,146,056.00	100.00
GRAND TOTAL	MARGINAL	510,893.00	11.97
	SMALL	1,251,905.00	29.34
	MEDIUM	1,160,182.00	27.19
	LARGE	1,343,692.00	31.49
	TOTAL	4,266,672.00	100.00

SOURCE : SURVEY DATA

The land-use pattern of the beneficiaries in the pre- and post-loan periods is given in Table 5.25. In total only 4.85 per cent of the total landholdings are not cultivated in the post-loan period whereas it was 17.84 per cent in the pre-loan period. About 69.53 per cent of the total land is used for rubber cultivation in the post-loan period whereas it was only 33.88 per cent in the pre-loan situation. The total landholdings increased from 1269.42 acres to 1417.18 acres which indicates that the farmer community had bought new land to the extend of 147.76 acres. The table highlights the fact that during

TABLE :5.25.

LAND USE PATTERN OF THE BENEFICIARIES IN THE PRE - AND POST- LOAN PERIODS
(LAND IN ACRES)

DISTRICT			NC	RUBBER	COCONUT	BANANA	ARECANUT	TAPIOCA	OTHERS	TOTAL
PATHANAMTHITTA	PRE	X	70.41	290.61	69.71	31.79	17.61	4.50	18.76	503.39
		%	13.99	57.73	13.85	6.32	3.50	0.89	3.73	100.00
	POST	X	12.19	431.69	63.16	10.40	14.99	2.05	8.50	542.98
		%	2.25	79.50	11.63	1.92	2.76	0.38	1.57	100.00
ERNAKULAM	PRE	X	32.19	12.20	54.43	19.80	0.26	7.50	36.55	162.93
		%	19.76	7.49	33.41	12.15	0.16	4.60	22.43	100.00
	POST	X	12.80	121.16	13.70	5.60	0.21	0.00	9.48	162.95
		%	7.86	74.35	8.41	3.44	0.13	0.00	5.82	100.00
PALAKKAD	PRE	X	123.83	127.92	122.25	106.17	38.09	13.00	72.44	603.10
		%	20.53	21.11	20.27	17.60	6.32	2.16	12.01	100.00
	POST	X	43.75	432.55	93.28	71.51	23.53	2.89	43.74	711.25
		%	6.15	60.82	13.11	10.05	3.31	0.41	6.15	100.00
GRAND TOTAL	PRE	X	226.43	430.13	246.39	157.76	55.96	25.00	127.75	1269.42
		%	17.84	33.88	19.41	12.43	4.41	1.97	10.06	100.00
	POST	X	68.74	985.40	170.14	87.51	38.73	4.94	61.72	1417.18
		%	4.85	69.53	12.01	6.17	2.73	0.35	4.36	100.00

SOURCE : SURVEY DATA

INDEX : " OTHERS " =PEPPER , GINGER , CARDOMUM
 OTHER SPICES , CASHEW NUT
 N.C. =NON-CULTIVATED LAND

the post-loan period the percentage-wise comparison of the land-use pattern shows that rubber takes the major share (69.53 per cent) followed by coconut (12.01 per cent), banana (6.17 per cent), arecanut (2.73 per cent), tapioca (0.35 per cent) and other crops constitute 4.36 per cent in the area. The district-wise trend showing land-use in the post-loan period is similar to the general trend except for a few differences in PTA where arecanut takes the third place and banana crop, the fourth. Table 5.25. clearly indicates a 35.65 per cent shift in cropping pattern from all other crops to rubber plantation (69.53 -33.88 per cent). The district-wise change in cropping pattern is also clear from the table. This supports the fact that the change in income as a result of the loan was highest (61.08 per cent) through change in cropping pattern (ICP). (Refer Table 5.31)

TABLE: 5.26.1.

**DETAILS OF COST PER UNIT INCURRED BY THE BENEFICIARIES
IN THE PRE-& POST-LOAN PERIODS**

DISTRICT	PERIOD		AMOUNT IN Rs.			
			MC	LC	AOC	TC
PATHANAMTHITTA	PRE	X	12,567.00	14,899.58	1,972.48	29,439.06
		%	42.69	50.61	6.70	100.00
	POST	X	30,341.73	37,686.90	3,322.69	71,351.32
		%	42.52	52.82	4.66	100.00
ERNAKULAM	PRE	X	4,053.73	7,866.46	798.54	12,718.73
		%	31.87	61.85	6.28	100.00
	POST	X	4,764.60	12,001.04	913.77	17,679.41
		%	26.95	67.88	5.17	100.00
PALAKKAD	PRE	X	8,145.99	9,556.68	947.77	18,650.44
		%	43.68	51.24	5.08	100.00
	POST	X	25,112.77	29,335.86	2,840.52	57,289.15
		%	43.84	51.21	4.96	100.00
AVERAGE	PRE	X	8,142.66	10,509.04	1,181.81	19,833.51
		%	41.06	52.99	5.96	100.00
	POST	X	20,552.80	26,507.83	2,405.23	49,465.86
		%	41.55	53.59	4.86	100.00

SOURCE : SURVEY DATA

INDEX.

M.C. = MATERIAL COST
L.C. = LABOUR COST

A.O.C. = ANNUAL OVER-
HEAD COST
TC = TOTAL COST

Table 5.26.1 gives information on the amount of cost incurred per unit of investment by the selected farmers in the pre- and post-loan periods. The average per unit cost incurred by the 177 farmers in the post-loan period is Rs49465.86 of which 53.59 per cent come under Labour Cost (LC), 41.55 per cent under Material Cost (MC) and 4.86 per cent under Annual Overhead Cost (AOC). In the pre-loan situation the average cost amounted to Rs.19833.51/-, of which Labour Cost constitute 52.99 per cent, Material Cost 41.06 per cent and Annual Overhead Cost only 5.96 per cent. The same trend is seen in the three districts.

TABLE :5.26.2.

DETAILS OF COST PER UNIT INCURRED BY THE NON- BENEFICIARIES

DISTRICT		MC	LC	AOC	TC
PATHANAMTHITTA	X	17,571.50	13,648.64	1,445.43	32,665.57
	%	53.79	41.78	4.42	100.00
ERNAKULAM	X	8,116.75	8,852.75	506.13	17,475.63
	%	46.45	50.66	2.90	100.00
PALAKKAD	X	15,143.00	18,415.22	1,692.30	35,250.52
	%	42.96	52.24	4.80	100.00
AVERAGE	X	13,663.36	14,269.34	1,269.00	29,201.70
	%	46.79	48.86	4.35	100.00

SOURCE : SURVEY DATA

INDEX.

M.C. = MATERIAL COST

A.O.C. = ANNUAL OVER-HEAD COST

L.C. = LABOUR COST

T.C. = TOTAL COST

Table 5.26.2 explains in detail the amount of cost incurred per unit of investment by the non-beneficiaries. It can be seen from the table that the total cost incurred by the 53 non-beneficiaries is estimated to be Rs.29201.70/-. Here the LC, MC and AOC constitute 48.86 per cent, 46.79 per cent and 4.35 per cent of the total cost (TC) respectively. The same trend can be seen in the districts of EKM and PKD but in PTA the MC seems to be higher than LC.

TABLE :5.27.1.**COMPARISON OF IMPUTED COST OF LABOUR WITH THE ACTUAL COST OF LABOUR
IN THE PRE-AND POST-LOAN PERIODS**

DISTRICT	PERIOD		AMOUNT IN Rs.		
			A.C.L.	I.C.L.	T.C.L.
PATHANAMTHITTA	PRE	X	709,300.00	5,880.00	715,180.00
		%	99.18	0.82	100.00
	POST	X	1,794,391.00	14,580.00	1,808,971.00
		%	99.19	0.81	100.00
ERNAKULAM	PRE	X	327,662.00	81,394.00	409,056.00
		%	80.10	19.90	100.00
	POST	X	551,330.00	72,724.00	624,054.00
		%	88.35	11.65	100.00
PALAKKAD	PRE	X	702,684.00	33,180.00	735,864.00
		%	95.49	4.51	100.00
	POST	X	2,097,221.00	161,640.00	2,258,861.00
		%	92.84	7.16	100.00
GRAND TOTAL	PRE	X	1,739,646.00	120,454.00	1,860,100.00
		%	93.52	6.48	100.00
	POST	X	4,442,942.00	248,944.00	4,691,886.00
		%	94.69	5.31	100.00

SOURCE : SURVEY DATA

INDEX

A.C.L.=ACTUAL COST OF LABOUR

I.C.L.=IMPUTED COST OF LABOUR

T.C.L. = TOTAL COST OF LABOUR.

Table 5.27.1 gives a comparison of imputed cost of labour (ICL) (own labour) with the actual cost of labour (ACL) (hired labour) in the pre-and post-loan periods. In the post-loan period the total cost of labour (TCL) is Rs.46,91,886/-, of which 94.69 per cent comes under hired labour cost (ACL) and 5.31 per cent under own labour cost (ICL). In the pre-loan period the TCL is Rs.18,60,100/-, of which hired labour cost (ACL) forms 93.52 per cent and the own labour component (ICL) forms only 6.48 per cent. The district-wise trend follows a similar pattern.

TABLE : 5.27.2.**COMPARISON OF THE IMPUTED COST OF LABOUR AND ACTUAL COST OF LABOUR OF
THE NON-BENEFICIARIES**

DISTRICT		AMOUNT IN Rs.		
		A.C.L.	I.C.L.	T.C.L.
PATHANAMTHITTA	X	190,304.00	777.00	191,081.00
	%	99.59	0.41	100.00
ERNAKULAM	X	118,785.00	22,859.00	141,644.00
	%	83.86	16.14	100.00
PALAKKAD	X	389,235.00	34,315.00	423,550.00
	%	91.90	8.10	100.00
GRAND TOTALS	X	698,324.00	57,951.00	756,275.00
	%	92.34	7.66	100.00

SOURCE : SURVEY DATA

INDEX

A.C.L. = ACTUAL COST OF LABOUR

T.C.L. = TOTAL COST OF LABOUR.

I.C.L. = IMPUTED COST OF LABOUR

A comparison between the imputed and actual cost of labour of the non-beneficiaries is given in Table 5.27.2. The sum total of labour cost of the 53 non-beneficiaries amounts to Rs.7,56,275/-, of which 92.34 per cent comes under hired labour cost and 7.66 per cent under own labour cost. The table gives more detailed information about the districts.

The classification of beneficiaries on the basis of pre- and post-loan net income per unit is given in Table 5.28.1. The total NII derived by the 177 beneficiary population amounts to Rs.33,822.55/-, of which LF got Rs.1,21,177.31/-, MEF Rs.42,349.92/-, SF Rs.19,222.87/- and MF Rs.8,687.55/-. The analysis shows that in percentage terms the NII is the highest with MEF i.e. 174.35 per cent and the lowest with LF i.e. 113.41 per cent. The district-wise study shows that NII is high in PTA i.e. 238.06 per cent and low in EKM i.e. 76.48 per cent. In PKD it is 159.98 per cent. The distribution of NII (in percentage terms) according to land size of farmer follows a similar pattern in the districts except for the LF in PTA and MEF in PKD.

TABLE :5.28.1.

**CLASSIFICATION OF BENEFICIARIES
ON THE BASIS OF PER UNIT PRE-& POST-LOAN NET INCOMES**

DISTRICT	CATEGORY OF FARMER	AMOUNT IN RS.			
		PRE NET INCOME	POST NET INCOME	N.I.I.(RS.) PER UNIT	N.I.I.(%)
PATHANAMTHITTA	MARGINAL	5,057.55	13,697.00	8,639.45	170.82
	SMALL	10,040.60	27,204.91	17,164.31	170.95
	MEDIUM	22,138.11	63,296.78	41,158.69	185.92
	LARGE	60,944.67	254,282.33	193,337.66	317.23
	TOTAL	17,529.94	59,261.25	41,731.31	238.06
ERNAKULAM	MARGINAL	9,955.90	14,722.70	4,766.80	47.88
	SMALL	19,078.50	34,612.00	15,533.50	81.42
	MEDIUM	29,150.43	70,614.43	41,464.00	142.24
	LARGE	144,774.00	193,578.00	48,804.00	33.71
	TOTAL	17,588.52	31,040.92	13,452.40	76.48
PALAKKAD	MARGINAL	458.00	13,114.40	12,656.40	27.63
	SMALL	8,927.43	33,898.21	24,970.78	279.71
	MEDIUM	21,584.06	66,011.15	44,427.09	205.83
	LARGE	114,837.82	236,228.09	121,390.27	105.71
	TOTAL	28,931.79	75,215.73	46,283.94	159.98
AVERAGE	MARGINAL	5,157.15	13,844.7	8,687.55	168.46
	SMALL	12,682.17	31,905.04	19,222.87	151.57
	MEDIUM	24,290.87	66,640.79	42,349.92	174.35
	LARGE	106,852.16	228,029.47	121,177.31	113.41
	TOTAL	21,350.08	55,172.63	33,822.55	158.42

SOURCE : SURVEY DATA

Table 5.28.2 gives the district-wise classification of the non-beneficiaries on the basis of their per hectare net income. The total net income per hectare for the 53 non-beneficiaries amounts to Rs.18,394.06/-. The district-wise study shows that the per hectare net income was the highest in PKD (Rs.20,481.14/-) and the lowest in EKM (Rs.15,038.25/-). In PTA it is Rs.15,476.88/-. Based on the above per hectare net income index for the non-beneficiaries it is concluded that the non-beneficiary farmers in PKD performed better than their counterparts in EKM and PTA.

TABLE 5.28.2.

**CLASSIFICATION OF NON-BENEFICIARIES
ON THE BASIS OF THEIR PER HECTARE NET INCOME**

DISTRICT	NET INCOME	AMOUNT IN Rs.
PATHANAMTHITTA		15,476.88
ERNAKULAM		15,038.25
PALAKKAD		20,481.14
AVERAGE		18,394.06

SOURCE : SURVEY DATA

The per hectare incremental income - investment ratio is given in Table 5.29.1. It can be seen from the table that the incremental income-investment ratio of 177 sample beneficiary farmers is high with respect to MEF i.e. 1.10:1 followed by SF 0.70:1, LF 0.63:1 and MF 0.48:1. The table clearly indicates that the ratio is high in PKD (0.81:1) whereas it is 0.76:1 in EKM and 0.58:1 in PTA. The data on the size-wise distribution of farmers district-wise, shows the same trend except in PTA district but it is noteworthy that even in PTA district the MEF has the highest incremental income-investment ratio.

Details of per unit incremental income-investment-ratio is shown in Table 5.29.2. In the case of the 177 sample beneficiary households, the ratio is high with respect to MEF (1.52:1). This is followed by MF (1.32:1). The ratio is the same with SF and LF (1.21:1). The analysis shows that the incremental income-investment ratio was the highest in PTA (1.17:1) and the lowest in PKD

(1.00:1). It is 1.04:1 in EKM district. The district-wise trend on income-investment ratio with reference to the farmer size-wise classification is quite similar to the general trend in the districts of PTA and EKM. But it has differences in PKD. However, even here the MEF seems to be the leader.

TABLE :5.29.1.**INCREMENTAL INCOME - INVESTMENT RATIO PER HECTARE**

DISTRICT	CATEGORY OF FARMER	INVESTMENT PER HECTARE	INCRE INCOME PER HECTARE	AMOUNT IN Rs.
				INCRE INCOME INVEST RATIO
PATHANAMTHITTA	MARGINAL	11,498.67	8,851.45	0.77:1
	SMALL	14,338.48	8,346.78	0.58:1
	MEDIUM	16,470.52	19,674.87	1.19:1
	LARGE	16,740.52	8,533.56	0.51:1
	TOTAL	15,943.85	9,325.10	0.58:1
ERNAKULAM	MARGINAL	17,871.32	8,242.66	0.46:1
	SMALL	15,316.55	11,167.30	0.73:1
	MEDIUM	12,455.08	15,351.09	1.23:1
	LARGE	14,998.81	9,694.11	0.65:1
	TOTAL	15,129.28	11,512.00	0.76:1
PALAKKAD	MARGINAL	29,104.65	10,837.70	0.37:1
	SMALL	19,405.63	15,048.16	0.78:1
	MEDIUM	16,588.93	15,058.39	0.91:1
	LARGE	14,471.46	10,966.92	0.76:1
	TOTAL	16,329.94	13,192.97	0.81:1
AVERAGE	MARGINAL	19,491.55	9,310.60	0.48:1
	SMALL	16,353.56	11,520.71	0.70:1
	MEDIUM	15,171.51	16,694.78	1.10:1
	LARGE	15,403.60	9,731.53	0.63:1
	TOTAL	15,801.02	11,343.36	0.72:1

SOURCE : SURVEY DATA

Table 5.30.1 shows the change in income level of the beneficiaries. The difference between means in the pre and post loan conditions is tested using 't' test. The data on the pooled analysis (the three districts taken together) shows significant difference at one per cent level. Information at the district level is available from the table. The 't' value appears to be most significant

in EKM district at one per cent level. In the case of PKD and PTA districts, the 't' values are 4.46 and 2.76 respectively at one per cent level of significance.

TABLE :5.29.2.

INCREMENTAL INCOME - INVESTMENT RATIO PER UNIT OF INVESTMENT

DISTRICT	CATEGORY OF FARMER	INVESTMENT PER UNIT	AMOUNT IN Rs.	
			INCRE INCOME PER UNIT	INCRE INCOME INVEST RATIO
PATHANAMTHITTA	MARGINAL	11,223.27	13,952.36	1.24:1
	SMALL	29,485.64	29,984.95	1.02:1
	MEDIUM	41,896.55	57,617.33	1.38:1
	LARGE	379,275.66	447,208.17	1.18:1
	AVERAGE	71,351.31	83,644.79	1.17:1
ERNAKULAM	MARGINAL	10,335.14	15,997.73	1.55:1
	SMALL	21,305.20	23,743.85	1.11:1
	MEDIUM	33,641.70	53,700.86	1.60:1
	LARGE	75,510.24	73,188.00	0.97:1
	AVERAGE	17,679.40	18,413.08	1.04:1
PALAKKAD	MARGINAL	26,501.60	33,698.00	1.27:1
	SMALL	32,201.50	46,590.11	1.45:1
	MEDIUM	48,943.03	78,049.36	1.59:1
	LARGE	160,181.00	226,399.91	1.41:1
	AVERAGE	84,832.00	84,922.61	1.00:1
AVERAGE	MARGINAL	16,020.00	21,216.03	1.32:1
	SMALL	27,664.11	33,439.64	1.21:1
	MEDIUM	41,493.76	63,122.52	1.52:1
	LARGE	204,988.97	248,932.03	1.21:1
	AVERAGE	57,954.24	62,326.83	1.08:1

SOURCE : SURVEY DATA

Table 5.30.2 shows the difference in income levels between the beneficiaries and non-beneficiaries. This is tested using 't' test. The general trend shows that there has been significant difference at one per cent level. In the case of PKD district there is no significant difference in the income levels. In PTA and EKM there is significant difference at five per cent and one per cent level of significance respectively.

TABLE :5.30.1.**CHANGE IN INCOME LEVELS OF BENEFICIARIES : TESTING OF DIFFERENCE BETWEEN MEANS.**

DISTRICT	AMOUNT IN Rs.		
	MEAN VALUE BEFORE	MEAN VALUE AFTER	't' VALUE
PATHANAMTHITTA	17,529.94	59,261.25	2.76*
ERNAKULAM	17,588.52	31,040.92	5.53*
PALAKKAD	28,931.79	75,215.72	4.46*
AVERAGE	22,507.28	57,911.18	5.69*

SOURCE : SURVEY DATA

NOTE:- * SIGNIFICANT AT 1% LEVEL

TABLE :5.30.2.**DIFFERENCE IN INCOME LEVELS BETWEEN BENEFICIARIES AND NON-BENEFICIARIES: TESTING OF DIFFERENCE BETWEEN MEANS**

DISTRICT	AMOUNT IN Rs.		
	BENEFICIARY MEAN VALUE	NON-BENEFICIARY MEAN VALUE	't' VALUE
PATHANAMTHITTA	59261.25	23192.50	1.98**
ERNAKULAM	31040.92	12890.69	2.63*
PALAKKAD	75215.72	45749.48	1.70***
AVERAGE	57911.18	29871.40	2.98*

SOURCE : SURVEY DATA

NOTE:- * SIGNIFICANT AT 1% LEVEL
 ** SIGNIFICANT AT 5% LEVEL
 *** NOT SIGNIFICANT

Table 5.31 explains the percentage-wise change in income of the beneficiaries as a result of increment through productivity (IP), increment through cropping intensity (ICI), increment through cropping pattern (ICP) and increment through farm practices (IFP). The table explains the fact that the change in income in the case of most farmers occurs mainly as a result of ICP (61.08 per cent) followed by IP (18.84 per cent), IFP (15.87 per cent) and the least through ICI (0.43 per cent). The rest of the incremental income is as a result of other factors. The district-wise comparison shows that majority of the farmers in the three districts (i.e. 43.23 per cent in PTA, 74.23 per cent in EKM and 65.78 per cent in PKD) experienced some increment in income as a result of ICP more than any of the other variables.

TABLE :5.31.

THE PERCENTAGE-WISE CHANGE IN INCOME OF BENEFICIARIES AS A RESULT OF INCREMENT THROUGH PRODUCTIVITY(I.P), INCREMENT THROUGH CROPPING INTENSITY (I.C.I), INCREMENT THROUGH CROPPING PATTERN (I.C.P.), & INCREMENT THROUGH FARM PRACTICES (I.F.P.)

DISTRICT	I.P.	I.C.I.	I.C.P.	I.F.P.	TOTAL
PATHANAMTHITTA	30.94	0.00	43.23	20.10	94.27
ERNAKULAM	14.23	0.00	74.23	9.54	98.00
PALAKKAD	11.36	1.30	65.78	17.96	96.40
AVERAGE	18.84	0.43	61.08	15.87	96.22

SOURCE : SURVEY DATA

TABLE :5.32.

CHANGE IN EMPLOYMENT LEVELS OF BENEFICIARIES

DISTRICT	OWN LABOUR				HIRLED LABOUR			
	DAYS	INCR/ MD/ HCTR	AMOUNT IN Rs.	INCR/ RS/HCTR	DAYS	INCR/ MD/ HCTR	AMOUNT (IN Rs.)	INCR/ Rs./HCTR
PATHANAMTHITTA	206.00	0.96	8,700.00	45.50	25,576.50	119.07	1085091	5051.45
ERNAKULAM	-(205.00)	-(3.38)	-(8,670.00)	-(142.68)	5,239.50	86.23	223668	3680.88
PALAKKAD	3,013.00	11.15	128,460.00	475.54	32,770.00	121.31	1394537	5162.40
AVERAGE	3014.00	6.00	128,490.00	235.47	63,586.00	117.00	2703296	4953.75

SOURCE : SURVEY DATA

INDEX : DAYS : TOTAL INCREMENTAL EMPLOYMENT IN MAN DAYS

INCR/MD/HCTR: INCREMENTAL EMPLOYMENT IN MANDAYS (MD) PER HECTARE

AMOUNT : TOTAL INCR EMPLOYMENT IN Rs.

INCR/Rs./HCTR : INCR EMPLOYMENT IN Rs. PER HECTARE

Table 5.32 explains in detail the change in employment levels of the beneficiaries. Own labour and hired labour components are analysed here. In the case of total sample beneficiary households, incremental own labour in man days is estimated to be 3,014 days whereas the incremental hired labour in mandays is estimated to be 63586.00. It is also noted that the incremental employment (own labour) in rupee terms is estimated as Rs.128490/- whereas it is Rs.2703296/- in the case of hired labour. The incremental employment generated per hectare is also given in Table 5.32. The incremental employment in man days per hectare is 6 which amounted to Rs.235.47/- per hectare. It should be noted in particular that the own labour component shows a negative figure in EKM. The incremental own employment in man days in EKM is - 205 as compared to the increment in mandays per hectare - 3.38. It is

the highest in PKD (11.15 mandays per hectare) and in PTA it is only 0.96 mandays per hectare. The incremental hired employment in mandays per hectare is 117 which in rupee terms comes up to 4953.75/-. The trend with reference to the districts can be gathered from the table. The per hectare incremental hired mandays is the highest in PKD (121.31 mandays) followed by PTA (119.07 mandays) and EKM (86.23 mandays). The total amount of payments made on hired labour and the per hectare payments can be had from the table 5.32.

TABLE :5.33.

CHANGE IN ASSET POSITION OF BENEFICIARIES

AMOUNT IN RS.

DISTRICT		INCREMENTAL LIVE STOCK ASSET PER UNIT	INCREMENTAL PHYSICAL ASSET PER UNIT	TOTAL
PATHANAMTHITTA	AMOUNT	4030.42	11182.71	15213.13
	%	26.49	73.51	100.00
ERNAKULAM	AMOUNT	4411.54	5512.69	9924.23
	%	44.45	55.55	100.00
PALAKKAD	AMOUNT	384.68	5017.40	5402.08
	%	7.12	92.88	100.00
AVERAGE	AMOUNT	2942.21	7237.60	10179.81
	%	28.90	71.10	100.00

SOURCE : SURVEY DATA

Table 5.33 explains the per unit change in asset position of the sample beneficiary community between pre-and post-loan periods. The assets of the farmers were broadly classified into two: Physical Assets, which include land and building, agricultural implements, bank money and other investments if any; and Livestock Assets include buffaloes, cows, sheep, goats and hens. The changes in the asset position have been highlighted in the table. As far as the total sample beneficiary population are concerned the increment in asset position per unit amounts to Rs.10,179.81/- of which 71.10 per cent is as a result of increment in physical assets

and 28.90 per cent as a result of increment in livestock assets. The district-wise distribution pattern is quite similar. A comparison between various districts shows that the total increment in asset position per unit was the highest in PTA i.e. Rs.15,213.13/- and the lowest in PKD Rs.5,402.08/-. It is Rs.9,924.23 in EKM.

TABLE :5.34

IMPACT OF THE LOAN ON LIVING STANDARD AND THE ADDITIONAL INCOME GENERATED

DISTRICT		IMPROVEMENT IN LIVING STANDARD.	ADDITIONAL INCOME GENERATED	COST SAVING
PATHANAMTHITTA	X	36.00	39.00	14.00
	%	75.00	81.25	29.17
ERNAKULAM	X	41.00	45.00	26.00
	%	78.85	86.54	50.00
PALAKKAD	X	76.00	71.00	44.00
	%	98.70	92.21	57.14
GRAND TOTAL	X	153.00	155.00	84.00
	%	86.44	87.57	47.46

SOURCE : SURVEY DATA

The details regarding the impact of the loan on living standard and the additional income generated is given in Table 5.34. It can be seen that when the sample beneficiary community is taken as a whole (177 farmers), 86.44 per cent experienced some improvement in their living standard and 87.57 per cent of them have generated additional income. The element of cost saving can be seen only in the case of 47.46 per cent of the sample beneficiary population. A similar trend can be seen with respect to the three districts.

A detailed view of the consequent changes by NABARD assistance on income, employment and indebtedness of the sample beneficiary community can be had from Table 5.35. Out of the 177 sample beneficiary households, 158 farmers (89.27 per cent) experienced some improvement in their income level. But 7.91 per cent did not have any increment and the income level of 2.82 per cent has declined in the post - loan situation. The employment level

TABLE :5.35
CONSEQUENT CHANGES BY NABARD ASSISTANCE ON INCOME ,
EMPLOYMENT , AND INDEBTEDNESS OF BENEFICIARIES.

		INCOME			EMPLOYMENT			INDEBTEDNESS			TOTAL
		BETTER	NO CHANGE	WORSE	BETTER	NO CHANGE	WORSE	BETTER	NO CHANGE	WORSE	
DISTRICT PATHANAM THITTA	X	42.00	2.00	4.00	39.00	5.00	4.00	27.00	16.00	5.00	48.00
	%	87.50	4.17	8.33	81.25	10.42	8.33	56.25	33.33	10.42	100.00
ERNAKULA M	X	45.00	7.00	0.00	38.00	14.00	0.00	22.00	29.00	1.00	52.00
	%	86.54	13.46	0.00	73.08	26.92	0.00	42.31	55.77	1.92	100.00
PALAKKAD	X	71.00	5.00	1.00	66.00	9.00	2.00	22.00	52.00	3.00	77.00
	%	92.21	6.49	1.30	85.71	11.69	2.60	28.57	67.53	3.90	100.00
GRAND TOTAL	X	158.00	14.00	5.00	143.00	28.00	6.00	71.00	97.00	9.00	177.00
	%	89.27	7.91	2.82	80.79	15.82	3.39	40.11	54.80	5.08	100.00

SOURCE : SURVEY DATA

shows a positive change in the case of 80.79 per cent of the 177 sample beneficiary households. The employment level shows a negative change in the case of 3.39 per cent and for 15.82 per cent there is no change in employment levels. From the point of view of indebtedness of the beneficiary, 71 farmers (40.11 per cent) show a favourable trend. In the case of about 55 per cent there is no change and indebtedness has worsened for 5.08 per cent of the beneficiary population. In the district of PKD 92.21 per cent of the beneficiaries experienced some improvement in income, 85.71 per cent some improvement in employment level and 28.57 per cent some decrease in their indebtedness. The percentage of beneficiaries who experienced no change with reference to income, employment and indebtedness are 6.49, 11.69 and 67.53 per cent respectively in PKD. Only a minor section of the farmer community experienced some worsening in their condition. Their percentages are 1.30 for income, 2.60 for employment and 3.90 for indebtedness. A similar trend can be seen in the case of PTA and EKM districts.

Questions were asked to the sample beneficiaries to ascertain whether NABARD's refinance is based on any grass-root level exercise or whether it is on a general macro exercise. The details of information collected is given in table 5.36. It can be seen from the table that 70.62 per cent of the sample beneficiary population hold the view that NABARD refinance is based on a general macro exercise whereas 29.38 per cent considered it on the basis of a grassroots level exercise. Around 64.58 per cent of the sample beneficiaries in PTA, 57.69 per cent in EKM and 83.12 per cent in PKD opined that their credit requirements are assessed by NABARD on general macro terms, based on the 'Unit Cost' alone. Contrary to this, 35.42 per cent of the sample beneficiaries in PTA, 42.31 per cent in EKM and 16.88 per cent in PKD hold the opinion that NABARD gives refinance taking into consideration their grass-root level needs.

TABLE :5.36.**INFORMATION ON THE GENERAL IMPACT OF NABARD REFINANCE**

DISTRICT		GRASS-ROOT LEVEL EXERCISE	GENERAL MACRO EXERCISE	TOTAL
PATHANAMTHITTA	X	17.00	31.00	48.00
	%	35.42	64.58	100.00
ERNAKULAM	X	22.00	30.00	52.00
	%	42.31	57.69	100.00
PALAKKAD	X	13.00	64.00	77.00
	%	16.88	83.12	100.00
GRAND TOTAL	X	52.00	125.00	177.00
	%	29.38	70.62	100.00

SOURCE : SURVEY DATA

CHAPTER 6



PERFORMANCE EVALUATION OF THE
MINOR IRRIGATION
SCHEME



CHAPTER 6

PERFORMANCE EVALUATION OF THE MINOR IRRIGATION SCHEME

In the previous chapter the impact of the Rubber Plantation Development Scheme on the selected beneficiaries was analysed. This chapter evaluates the performance of minor irrigation schemes. The chapter is divided into six sections. The first section presents the Identification Particulars and the socio-economic features of the loanees. The second section explains the Technical Particulars and the third, Financial Particulars. The fourth section explains the Infrastructural Particulars and the fifth the Opportunity Cost aspects. Section six gives a detailed analysis of the Impact of the Scheme. The impact is analysed with respect to income, employment and asset position of the beneficiaries.

SECTION I

IDENTIFICATION PARTICULARS

This section presents the basic information on the beneficiaries. The information relates to the distribution of the sample households, district-wise and agency-wise, classification of beneficiaries and non-beneficiaries by size of landholding and purpose of loan, crop-wise classification of land of the beneficiaries and non-beneficiaries and demographic features of the sample farmers.

TABLE : 6.1.**DISTRICT-WISE AND AGENCY-WISE DISTRIBUTION OF THE SAMPLE HOUSE HOLDS**

DISTRICT	TYPE	F	%
PATHANAMTHITTA	C.B	6.00	50.00
	S.L.D.B	6.00	50.00
	TOTAL	12.00	100.00
ERNAKULAM	C.B	9.00	50.00
	S.L.D.B	9.00	50.00
	TOTAL	18.00	100.00
PALAKKAD	C.B	19.00	50.00
	S.L.D.B	19.00	50.00
	TOTAL	38.00	100.00
GRAND TOTAL	C.B	34.00	50.00
	S.L.D.B	34.00	50.00
	TOTAL	68.00	100.00

SOURCE : SURVEY DATA

INDEX : C.B. - COMMERCIAL BANK ;
S.L.D.B. - STATE LAND DEVELOPMENT BANK
F - FREQUENCY

The district-wise and agency-wise distribution of the sample households is given in Table 6.1. The 68 sample beneficiary farmers are randomly selected from Pathanamthitta (PTA), Ernakulam (EKM) and Palakkad (PKD). Of the 68 beneficiary farmers selected, 34 each have taken loan from Commercial Banks (CBs) and State Land Development Banks (SLDBs). From PTA 12 farmers are selected and they are equally spread between CBs and SLDBs. Eighteen farmers are selected from EKM of which nine each are from CBs and SLDBs. From PKD 38 farmers are selected, of which 19 each are from CBs and SLDBs.

Table 6.2 gives the classification of the selected beneficiaries by size of landholding and purpose of loan. Out of the 68 beneficiaries, 10 farmers (14.71 %) availed loan for the New Well scheme while only seven farmers (10.29 %) have taken loan for the Pumpset scheme. Nearly 75% of the beneficiaries (51 farmers) have taken loan for the New Well with Pumpset scheme. The table shows that of the total beneficiaries, 31 farmers (45.59 %) are marginal farmers (MF), 21 (30.88%) are small farmers (SF), 13 (19.12%) are medium farmers (MEF) and only three (4.41%) are large farmers (LF). The trend with respect to the purpose-

TABLE : 6.2.

CLASSIFICATION OF THE SELECTED BENEFICIARIES BY SIZE OF LAND HOLDING AND PURPOSE OF LOAN

DISTRICT	CATEGORY	NEW-WELL		PUMPSET		NEW-WELL WITH PUMPSET		TOTAL	
		F	%	F	%	F	%	F	%
PATHANAMTHITTA	MF	2.00	16.67	1.00	8.33	3.00	25.00	6.00	50.00
	SF	0.00	0.00	0.00	0.00	4.00	33.33	4.00	33.33
	MEF	0.00	0.00	0.00	0.00	2.00	16.67	2.00	16.67
	LF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL	2.00	16.67	1.00	8.33	9.00	75.00	12.00	100.00
ERNAKULAM	MF	1.00	5.56	3.00	16.67	12.00	66.67	16.00	88.89
	SF	1.00	5.56	0.00	0.00	1.00	5.56	2.00	11.11
	MEF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	LF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL	2.00	11.11	3.00	16.67	13.00	72.22	18.00	100.00
PALAKKAD	MF	2.00	5.26	2.00	5.26	5.00	13.16	9.00	23.68
	SF	1.00	2.63	1.00	2.63	13.00	34.21	15.00	39.47
	MEF	3.00	7.89	0.00	0.00	8.00	21.05	11.00	28.95
	LF	0.00	0.00	0.00	0.00	3.00	7.89	3.00	7.89
	TOTAL	6.00	15.79	3.00	7.89	29.00	76.32	38.00	100.00
GRAND TOTAL	MF	5.00	7.35	6.00	8.82	20.00	29.41	31.00	45.59
	SF	2.00	2.94	1.00	1.47	18.00	26.47	21.00	30.88
	MEF	3.00	4.41	0.00	0.00	10.00	14.71	13.00	19.12
	LF	0.00	0.00	0.00	0.00	3.00	4.41	3.00	4.41
	TOTAL	10.00	14.71	7.00	10.29	51.00	75.00	68.00	100.00

SOURCE : SURVEY DATA

INDEX : M.F. = MARGINAL FARMER
ME.F. = MEDIUM FARMERS.F. = SMALL FARMER
L.F. = LARGE FARMER

TABLE :6.3.

CROP- WISE CLASSIFICATION OF LAND OF THE BENEFICIARIES AND NON-BENEFICIARIES

DISTRICT		LAND IN ACRES										TOTAL
		RUBBER	COCONUT	BANANA	ARECANUT	TAPIOCA	OTHERS					
PATHANAMTHITTA	BENEFICIARY	X	17.00	7.78	3.50	2.35	0.00	0.47	31.10			
		%	54.66	25.02	11.25	7.56	0.00	1.51	100.00			
	NON-BENEFICIARY	X	9.00	2.00	0.25	0.00	0.00	0.00	11.25			
		%	80.00	17.78	2.22	0.00	0.00	0.00	100.00			
ERNAKULAM	BENEFICIARY	X	13.22	6.63	3.14	1.69	0.00	1.67	26.35			
		%	50.17	25.16	11.92	6.41	0.00	6.34	100.00			
	NON-BENEFICIARY	X	1.50	6.13	1.00	1.50	1.25	2.50	13.88			
		%	10.81	44.16	7.20	10.81	9.01	18.01	100.00			
PALAKKAD	BENEFICIARY	X	41.25	60.75	34.60	9.28	0.94	37.73	184.55			
		%	22.35	32.92	18.75	5.03	0.51	20.44	100.00			
	NON-BENEFICIARY	X	10.00	32.90	15.30	2.50	0.00	19.79	80.49			
		%	12.42	40.87	19.01	3.11	0.00	24.59	100.00			
GRAND TOTAL	BENEFICIARY	X	71.47	75.16	41.24	13.32	0.94	39.87	242.00			
		%	29.53	31.06	17.04	5.50	0.39	16.48	100.00			
	NON-BENEFICIARY	X	20.50	41.03	16.55	4.00	1.25	22.29	105.62			
		%	19.41	38.85	15.67	3.79	1.18	21.10	100.00			

SOURCE : SURVEY DATA

(" OTHERS " MEAN PEPPER , GINGER , CARDOMUM , OTHER SPICES , CASHEW NUT)
(X = AREA IN ACRES)

wise distribution of beneficiaries is the same in the three districts except in EKM, where the Pumpset scheme has greater number of loanees (16.67 %) than the New Well scheme (11.11 %). The district-wise, farmer category-wise classification also show the same trend except in PKD where the number of medium farmers (11) are less than that of small farmers (15).

Table 6.3 shows the crop-wise classification of land of the beneficiaries and non-beneficiaries. The total landholding of 68 beneficiaries is estimated to be 242 acres of which 31.06 % (75.16 acres) is under coconut cultivation, 29.53 % (71.47 acres) under rubber, 17.04 % (41.24 acres) under banana, 5.50 % (13.32 acres) under arecanut ,0.39 % (0.94 acres) under tapioca and 16.48% (39.87) under other crops. The same trend can be seen in the case of beneficiaries in PKD district. But in PTA and EKM rubber cultivation takes the first place. The land-use pattern of the non-beneficiaries can be had from table 6.3.

TABLE : 6.4.1.

DEMOGRAPHIC CLASSIFICATION OF BENEFICIARIES

DISTRICT		MALE	FEMAE	AGE				TOTAL
				1 TO 25	26 TO 50	51 TO 75	> 75	
PATHANAMTHITTA	X	10.00	2.00	0.00	8.00	4.00	0.00	12.00
	%	83.33	16.67	0.00	66.67	33.33	0.00	100.00
ERNAKULAM	X	17.00	1.00	0.00	5.00	13.00	0.00	18.00
	%	94.44	5.56	0.00	27.78	72.22	0.00	100.00
PALAKKAD	X	31.00	7.00	0.00	17.00	21.00	0.00	38.00
	%	81.58	18.42	0.00	44.74	55.26	0.00	100.00
GRAND TOTAL	X	58.00	10.00	0.00	30.00	38.00	0.00	68.00
	%	85.29	14.71	0.00	44.12	55.88	0.00	100.00

SOURCE : SURVEY DATA

INDEX : X=FREQUENCY

The demographic features of the beneficiaries are given in Table 6.4.1. The table shows that of the 68 beneficiaries, 85.29 per cent (58) are

males and the rest, females. Of the total beneficiary community 55.88 per cent (38 farmers) fall in the age-group between 51 to 75 years. The sex-wise and age -wise distribution of the beneficiaries at the district level follows the same trend except for the age -wise distribution in PTA where majority of the farmers (66.67 per cent) come under the age- group 26 to 50 years.

TABLE : 6.4.2.

CLASSIFICATION OF THE BENEFICIARIES ACCORDING TO NATURE OF RESIDENCE, EDUCATION AND OCCUPATION

DISTRICT		NRI		EDUCATION				PRIMARY OCCUPATION		TOTAL
		Yes	No	I	P	S	C	A	NA	
PATHANAMTHITTA	X	4	8	1.00	1.00	6.00	4.00	9.00	3.00	12.00
	%	33.3	66.8	8.33	8.33	50.00	33.33	75.00	25.00	100.00
ERNAKULAM	X	1	17	2.00	6.00	8.00	2.00	18.00	0.00	18.00
	%	5.5	94.4	11.11	33.33	44.44	11.11	100.00	0.00	100.00
PALAKKAD	X	-	38	8.00	14.00	13.00	3.00	21.00	17.00	38.00
	%	-	100	21.05	36.84	34.21	7.89	55.26	44.74	100.00
GRAND TOTAL	X	5	63	11.00	21.00	27.00	9.00	48.00	20.00	68.00
	%	7.35	92.6	16.18	30.88	39.71	13.24	70.59	29.41	100.00

SOURCE : SURVEY DATA

INDEX : X =FREQUENCY; I=ILLITERATE, P=PRIMARY,
S=SECONDARY, C=COLLEGIATE, A= AGRICULTURE
,NA=NON AGRICULTURE

The classification of beneficiaries according to nature of residence, education and occupation is shown in table 6.4.2. As far as the total beneficiary population is concerned, the Non-Resident Indians (NRIs) form only 7.35 per cent (5 farmers). There are Non-Resident Indians in the farmer community of PTA and EKM, but none in PKD. The level of education shows that 30.88 per cent (21 farmers) of the beneficiaries have primary education, while 39.71 per cent (27 farmers) secondary education and only 13.24 percent (9 farmers) have collegiate education. In general, the percentage of all illiterates are only 16-18 per cent (11 farmers). The district - wise study shows that in PTA there is a high level of secondary (50 per cent) and collegiate (33.33 per cent) education. EKM district also shows a high level of secondary education. The illiterate farmer population is the least in PTA (8.33 per cent) . In

PKD district those having primary education are 36.84 per cent followed by secondary (34.21 per cent) and collegiate education (7.89 per cent). Table 6.4.2 also indicates that majority of the beneficiary population (48 farmers; 70.59 per cent) are engaged primarily in agricultural activities. The same occupational trend can be seen in the district except in EKM where all the farmers are engaged in agricultural activities.

TABLE : 6.4.3.

DEMOGRAPHIC CLASSIFICATION OF NON-BENEFICIARIES

DISTRICT		MALE	FEMALE	AGE				TOTAL
				1 TO 25	26 TO 50	51 TO 75	> 75	
PATHANAMTHITTA	X	3.00	1.00	0.00	0.00	4.00	0.00	4.00
	%	75.00	25.00	0.00	0.00	100.00	0.00	100.00
ERNAKULAM	X	6.00	0.00	0.00	0.00	6.00	0.00	6.00
	%	100.00	0.00	0.00	0.00	100.00	0.00	100.00
PALAKKAD	X	10.00	2.00	0.00	7.00	5.00	0.00	12.00
	%	83.33	16.67	0.00	58.33	41.67	0.00	100.00
GRAND TOTAL	X	19.00	3.00	0.00	7.00	15.00	0.00	22.00
	%	86.36	13.64	0.00	31.82	68.18	0.00	100.00

SOURCE : SURVEY DATA

INDEX : X =Frequency

Table 6.4.3 explains the demographic classification of non-beneficiaries. Of the total non-beneficiaries, 86.36 per cent are males. The age-wise analysis shows that 68.18 per cent of the total population come under the age group of 26 to 50 years. The district-wise study shows that all the non - beneficiary farmers in PTA and EKM come under the age group 51 to 75, whereas in PKD 58.33 per cent come under the age group 26 to 50 and 41.67 per cent under 51 to 75 years.

TABLE : 6.4.4.**CLASSIFICATION OF THE NON - BENEFICIARIES ACCORDING TO NATURE OF RESIDENCE, EDUCATION AND OCCUPATION**

DISTRICT		NRI		EDUCATION				PRIMARY OCCUPATION		TOTAL
		YES	NO	I	P	S	C	A	NA	
PATHANAMTHITTA	X	0	4	0.00	1.00	2.00	1.00	4.00	0.00	4.00
	%	0	100	0.00	25.00	50.00	25.00	100.00	0.00	100.00
ERNAKULAM	X	0	6	1.00	2.00	3.00	0.00	6.00	0.00	6.00
	%	0	100	16.67	33.33	50.00	0.00	100.00	0.00	100.00
PALAKKAD	X	0	12	1.00	4.00	7.00	0.00	5.00	7.00	12.00
	%	0	100	8.33	33.33	58.33	0.00	41.67	58.33	100.00
GRAND TOTAL	X	0	22	2.00	7.00	12.00	1.00	15.00	7.00	22.00
	%	0	100	9.09	31.82	54.55	4.55	68.18	31.82	100.00

SOURCE : SURVEY DATA

INDEX : X = FREQUENCY ; I = ILLITERATE , P = PRIMARY ,
S = SECONDARY , C = COLLEGIATE
A=AGRICULTURE, NA=NON-AGRICULTURE

Table 6.4.4 shows the classification of the non-beneficiaries on the basis of their nature of residence, education and occupation. It is noteworthy that there are no Non - Resident Indians among the non-beneficiary farmers . About 31.82 per cent of the total non - beneficiary farmers have primary education, 54.55 per cent have secondary education and 4.55 per cent have collegiate education. The percentage of illiterate population is 9.09. The district-wise details regarding the educational level of the farmers can be had from the table. The occupational pattern of the non-beneficiary population shows that 68.18 per cent are engaged primarily in agricultural activities and 31.82 per cent in non-agricultural activities. The district-wise pattern of the occupational trend shows that in both EKM and PTA all the farmers are engaged in agricultural activities while in PKD majority of them (58.33 per cent) are engaged primarily in non-agricultural activities.

SECTION - II

TECHNICAL PARTICULARS

This section deals with Technical Particulars. The classification of beneficiaries and non-beneficiaries on the basis of spacing between different minor irrigation works and the source from which information is received, details regarding the minor irrigation machinery, gap in credit requirement and the difficulties experienced by the farmers in obtaining the loan are analysed here.

The classification of beneficiaries and non-beneficiaries on the basis of the recommended spacing between different types of minor irrigation works and source from which information was received are highlighted in Table 6.5. Of the total beneficiary population, 79.41 per cent (54 farmers) have spacing between different minor irrigation works and the rest did not. These farmers were asked about the source from which they received information. Thirty farmers (55.56 per cent) had prior knowledge about it, while 29.63 per cent (16) had information from Krishi Bhavan, and 11.11 per cent (6) from neighbours. Only two farmers (3.70 per cent) got information from the Village Extension Officers. The trend is the same at the district level except for some minute differences. The related particulars for the non-beneficiaries can be had from table 6.5.

Table 6.6 gives details regarding the minor irrigation equipments used by the beneficiaries and non-beneficiaries. Out of the 68 farmers, only 82.35 per cent have pumpset with ISI mark. The same trend can be seen in the three districts also. In the case of the non-beneficiary farmers

TABLE : 6.5

CLASSIFICATION OF BENEFICIARIES AND NON-BENEFICIARIES ON THE BASIS OF SPACING BETWEEN DIFFERENT TYPES OF MINOR IRRIGATION WORKS AND SOURCE FROM WHICH INFORMATION WAS RECEIVED

DISTRICT	TYPE OF FARMER	SPACING BETWEEN MINOR IRRIGATION WORK	SELF	SOURCE OF INFORMATION			TOTAL
				KRISHI BHAVAN	VILLAGE EXTENSION OFFICER	NEIGHBOUR	
PATHANAMTHITTA	BENEFICIARY	X	5.00	2.00	0.00	1.00	8.00
		%	66.67	25.00	0.00	12.50	100.00
	NON-BENEFICIARY	X	1.00	0.00	0.00	0.00	1.00
		%	25.00	100.00	0.00	0.00	100.00
ERNAKULAM	BENEFICIARY	X	5.00	3.00	0.00	3.00	11.00
		%	61.11	27.27	0.00	27.27	100.00
	NON-BENEFICIARY	X	6.00	0.00	0.00	0.00	6.00
		%	100.00	0.00	0.00	0.00	100.00
PALAKKAD	BENEFICIARY	X	20.00	11.00	2.00	2.00	35.00
		%	92.11	31.43	5.71	5.71	100.00
	NON-BENEFICIARY	X	8.00	0.00	0.00	2.00	10.00
		%	83.33	0.00	0.00	20.00	100.00
GRAND TOTAL	BENEFICIARY	X	30.00	16.00	2.00	6.00	54.00
		%	55.56	29.63	3.70	11.11	100.00
	NON-BENEFICIARY	X	15.00	0.00	0.00	2.00	17.00
		%	77.27	0.00	0.00	11.76	100.00

SOURCE : SURVEY DATA

59.09 per cent (13 farmers) have pumpsets with ISI mark. The non-beneficiary farmers in PTA and EKM show the same pattern, but in PKD majority the farmers have pumpsets without ISI mark.

The classification of beneficiaries according to their credit gap is given in Table 6.7. The credit gap percentage for the three districts together works out to 22.09 per cent. The agency-wise classification shows that the credit gap percentage for CB is 22.15 whereas for SLDB it is 21.95. The district-wise analysis shows that the credit gap is high in PKD (27.90 per cent) and low in EKM (10.31 per cent). In PTA the gap is 22.02 per cent. The district-wise analysis shows that the SLDB loanees have a higher credit gap than CB loanees.

TABLE :6.6

DETAILS REGARDING MINOR IRRIGATION MACHINERY

DISTRICT	TYPE OF FARMER		PUMPSET WITH ISI MARK	PUMPSET WITHOUT ISI MARK	TOTAL
PATHANAMTHITTA	BENEFICIARY	X	9.00	3.00	12.00
		%	75.00	25.00	100.00
	NON-BENEFICIARY	X	3.00	1.00	4.00
		%	75.00	25.00	100.00
ERNAKULAM	BENEFICIARY	X	15.00	3.00	18.00
		%	83.33	16.67	100.00
	NON-BENEFICIARY	X	6.00	0.00	6.00
		%	100.00	0.00	100.00
PALAKKAD	BENEFICIARY	X	32.00	6.00	38.00
		%	84.21	15.79	100.00
	NON-BENEFICIARY	X	4.00	8.00	12.00
		%	33.33	66.67	100.00
GRAND TOTAL	BENEFICIARY	X	56.00	12.00	68.00
		%	82.35	17.65	100.00
	NON-BENEFICIARY	X	13.00	9.00	22.00
		%	59.09	40.91	100.00

SOURCE : SURVEY DATA

TABLE 6.7.**BANK-WISE DISTRIBUTION OF THE BENEFICIARIES
ACCORDING TO THEIR CREDIT-GAP PER UNIT OF INVESTMENT**

DISTRICT	BANK	TCI	TCA	OWN FUND	GAP	AMOUNT IN Rs.	
							%
PATHANAMTHITTA	CB	8,895.33	7,075.67	0.00	1,819.66		20.46
	SLDB	16,616.67	10,885.50	1,933.33	3,797.84		22.86
	AVERAGE	12,756.00	8,980.59	966.67	2,808.75		22.02
ERNAKULAM	CB	11,755.56	10,637.00	55.56	1,063.00		9.04
	SLDB	11,228.89	9,923.20	0.00	1,305.69		11.63
	AVERAGE	11,492.23	10,280.10	27.78	1,184.35		10.31
PALAKKAD	CB	19,160.42	13,748.79	389.26	5,022.37		26.21
	SLDB	2,989.47	1,831.58	0.00	1,157.89		38.73
	AVERAGE	11,074.95	7,790.19	194.63	3,090.13		27.90
AVERAGE	CB	15,388.82	11,747.68	232.24	3,408.90		22.15
	SLDB	7,575.29	5,571.24	341.18	1,662.87		21.95
	AVERAGE	11,482.06	8,659.46	286.71	2,535.89		22.09

SOURCE : SURVEY DATA

C.B. -- COMMERCIAL BANK , SLDB -- STATE LAND DEVELOPMENT BANK)
T.C.I. -TOTAL COST INCURRED , T.C.A .- TOTAL COST APPROVED**TABLE :6.8****DETAILS REGARDING DIFFICULTIES TO OBTAIN THE LOAN**

DISTRICT		DIFFICULTIES EXPERIENCED	DAYS OF LABOUR LOST					EXTRA PAYMENT		TOTAL
			1 - 2	3 - 4	5 - 6	7 - 8	TOTAL	YES	NO	
PATHANAMTHITTA	X	12.00	8.00	4.00	0.00	0.00	12.00	0.00	12.00	12
	%	100.00	66.67	33.33	0.00	0.00	100.00	0.00	100.00	100
ERNAKULAM	X	13.00	8.00	3.00	2.00	0.00	13.00	3.00	15.00	18
	%	72.22	61.54	23.08	15.38	0.00	100.00	16.67	83.33	100
PALAKKAD	X	31.00	3.00	7.00	7.00	14.00	31.00	9.00	29.00	38
	%	81.58	9.68	22.58	22.58	45.16	100.00	23.68	76.32	100
GRAND TOTAL	X	56.00	19.00	14.00	9.00	14.00	56.00	12.00	56.00	68
	%	82.35	33.93	25.00	16.07	25.00	100.00	17.65	82.35	100

SOURCE :SURVEY DATA

Details regarding difficulties experienced by the farmers in obtaining loan is highlighted in Table 6.8. Of the sample farmers 56 (82.35 per cent) experienced certain difficulties. Of the 56 farmers, 33.93 per cent (19 farmers) have lost one to two days of labour to get the loan, while 25 per cent lost seven to eight days. The farmers who lost three to four days account for 25 per cent while those who lost five to six days constitute 16.07 per cent. It is seen that 17.65 per cent of the total beneficiary population had to give extra money to obtain the loan. The

district-wise study on the above particulars shows that in PTA all farmers experienced difficulties to get the loan while in EKM and PKD 72.22 per cent and 81.58 per cent respectively experienced difficulty. It is worth noting that none of the farmers in PTA paid any extra money to get the loan whereas in EKM and PKD the situation is different.

SECTION III

FINANCIAL PARTICULARS

This section is on the Financial Particulars. It deals with the loan repayment performance, extent of subsidy, nature of security, commitment-disbursement gap and the time-lag between the date of application and the sanctioning of loan.

The loan repayment performance of the beneficiaries is given in Table 6.9.1. The table shows that 55.88 per cent of the beneficiaries (38 farmers) repaid their loans partly, while 42.65 per cent, (29 farmers) loans fully. Only 1.47 per cent have defaulted completely. The average for the three districts shows that the SLDB loanees formed the highest proportion of 'fully repaid' category (44.12 per cent), while the CB loanees formed 41.18 per cent. Among the partly repaying category the CBs took the lead (58.82 per cent) and SLDB (52.94 per cent) follows. While CBs have no 'unpaid' category of loanees SLDBs have 2.94 per cent in this category. The same trend can be seen in PKD for unpaid and partly paid category but with a few difference in the 'fully paid' category. In PTA and EKM, CB has the first place for the 'fully repaid' category. In both the districts there are no farmers under the 'unpaid' category.

TABLE 6.9.1.**REPAYMENT PERFORMANCE OF THE BENEFICIARIES**

		FULLY PAID		PARTLY PAID		UNPAID		TOTAL	
DISTRICT	BANK	X	%	X	%	X	%	X	%
PATHANAMTHITTA	CB	5.00	83.33	1.00	16.67	0.00	0.00	6.00	100.00
	SLDB	3.00	50.00	3.00	50.00	0.00	0.00	6.00	100.00
	TOTAL	8.00	66.67	4.00	33.33	0.00	0.00	12.00	100.00
ERNAKULAM	CB	6.00	66.67	3.00	33.33	0.00	0.00	9.00	100.00
	SLDB	3.00	33.33	6.00	66.67	0.00	0.00	9.00	100.00
	TOTAL	9.00	50.00	9.00	50.00	0.00	0.00	18.00	100.00
PALAKKAD	CB	3.00	15.79	16.00	84.21	0.00	0.00	19.00	100.00
	SLDB	9.00	47.37	9.00	47.37	1.00	5.26	19.00	100.00
	TOTAL	12.00	31.58	25.00	65.79	1.00	2.63	38.00	100.00
GRAND TOTAL	CB	14.00	41.18	20.00	58.82	0.00	0.00	34.00	100.00
	SLDB	15.00	44.12	18.00	52.94	1.00	2.94	34.00	100.00
	TOTAL	29.00	42.65	38.00	55.88	1.00	1.47	68.00	100.00

SOURCE : SURVEY DATA
INDEX : C.B. -- COMMERCIAL BANK ,
SLDB -- STATE LAND DEVELOPMENT BANK
X = FREQUENCY

Table 6.9.2 shows the mode of repayment by the beneficiaries. Of the total beneficiaries, 50 per cent (34) used both agricultural and non-agricultural income to repay their loans whereas 45.59 per cent (31) used only agricultural income. Only 4.41 per cent repaid their loans from non-agricultural income sources. In EKM 50 per cent (9) repaid their loans out of agricultural income while the rest 50 per cent from both agricultural and non-agricultural income. The trend for PTA and PKD can be seen from table 6.9.2.

TABLE 6.9.2.**MODE OF REPAYMENT**

DISTRICT	AGRICULTURE		NON-AGRICULTURE		BOTH		TOTAL	
	X	%	X	%	X	%	X	%
PATHANAMTHITTA	2.00	16.67	2.00	16.67	8.00	66.67	12.00	100.00
ERNAKULAM	9.00	50.00	0.00	0.00	9.00	50.00	18.00	100.00
PALAKKAD	20.00	52.63	1.00	2.63	17.00	44.74	38.00	100.00
GRAND TOTAL	31.00	45.59	3.00	4.41	34.00	50.00	68.00	100.00

SOURCE : SURVEY DATA
INDEX : X = FREQUENCY

TABLE :6.9.3
WILFUL AND NON-WILFUL DEFAULTERS

DISTRICT	CATEGORY TYPE	WILFUL		NON-WILFUL	
		F	%	F	%
PATHANAMTHITTA	MF	0.00	0.00	3.00	75.00
	SF	0.00	0.00	0.00	0.00
	MEF	0.00	0.00	1.00	25.00
	LF	0.00	0.00	0.00	0.00
	TOTAL	0.00	0.00	4.00	100.00
ERNAKULAM	MF	0.00	0.00	9.00	100.00
	SF	0.00	0.00	0.00	0.00
	MEF	0.00	0.00	0.00	0.00
	LF	0.00	0.00	0.00	0.00
	TOTAL	0.00	0.00	9.00	100.00
PALAKKAD	MF	3.00	11.54	5.00	19.23
	SF	2.00	7.69	10.00	38.46
	MEF	0.00	0.00	6.00	23.08
	LF	0.00	0.00	0.00	0.00
	TOTAL	5.00	19.23	21.00	80.77
GRAND TOTAL	MF	3.00	7.69	17.00	43.59
	SF	2.00	5.13	10.00	29.41
	MEF	0.00	0.00	7.00	17.95
	LF	0.00	0.00	0.00	0.00
	TOTAL	5.00	12.82	34.00	87.18

SOURCE : SURVEY DATA

INDEX : M.F. = MARGINAL FARMER S.F. = SMALL FARMER
ME.F. = MEDIUM FARMER L.F. = LARGE FARMER

An attempt is made in Table 6.9.3 to find out wilful and non-wilful defaulters of the sample societies. The table indicates that only 39 farmers (57.35 per cent) are considered as defaulters. Of the 39 defaulters, 87.18 per cent (34) are non-wilful defaulters while the rest (12.82 per cent) are wilful defaulters. The district-wise study shows that there are no wilful defaulters in PTA and EKM. The number of defaulters among the marginal farmers are high (20 farmers). The district-wise trend shows that in PKD the the small farmer group have the highest number of defaulters whereas in PTA and in EKM the largest number of defaulters are the marginal farmers.

The district-wise recovery pattern of the beneficiary farmers is depicted in Table 6.10. The recovery percentage with respect to the 68

farmers constitute 75.08 per cent. In general the agency-wise details show that the recovery percentage was high with CBs (77.62 per cent) compared with SLDBs (73.57 per cent). The same is the trend in PTA and EKM while in PKD the recovery percentage is higher for SLDBs (71.84 per cent) than that of CBs (69.08 per cent).

TABLE : 6.10**DISTRICT-WISE RECOVERY PATTERN**

DISTRICT	BANK	DEMAND	COLLECTION	AMOUNT IN Rs.	
				BALANCE	RECOVERY %
PATHANAMTHITTA	CB	36,291.00	35,697.00	594.00	98.36
	SLDB	73,953.00	65,491.00	8,462.00	88.56
	TOTAL	110,244.00	101,188.00	9,056.00	91.79
ERNAKULAM	CB	69,665.00	57,111.00	12,554.00	81.98
	SLDB	94,979.00	62,506.00	32,473.00	65.81
	TOTAL	164,644.00	119,617.00	45,027.00	72.65
PALAKKAD	CB	123,677.00	85,430.00	38,247.00	69.08
	SLDB	215,702.00	154,968.00	60,734.00	71.84
	TOTAL	339,379.00	240,398.00	98,981.00	70.83
GRAND TOTAL	CB	229,633.00	178,238.00	51,395.00	77.62
	SLDB	384,634.00	282,965.00	101,669.00	73.57
	TOTAL	614,267.00	461,203.00	153,064.00	75.08

SOURCE : SURVEY DATA

INDEX : C.B. -- COMMERCIAL BANK , SLDB -- STATE LAND DEVELOPMENT BANK

Details regarding the extent of subsidy received by the beneficiaries and non-beneficiaries and the nature of security given by the beneficiaries are presented in Table 6.11. Of the 68 beneficiary farmers, 29 farmers (42.65 per cent) received subsidy. The average amount of subsidy received is Rs.1,656.09/-. Of the total beneficiaries, subsidy is received by 50 per cent in PTA, 38.89 per cent in EKM and 42.11 per cent in PKD. The average amount of subsidy received is high in EKM i.e. Rs.1,803.43/- followed by PTA Rs.1,655.33/- and PKD Rs.1,509.50/-. In the case of non-beneficiaries only four farmers (18.18 per cent) received subsidy and the average amount of subsidy is Rs.510/-. The non-beneficiary community in PTA and EKM did not get subsidy;

whereas in PKD 33.33 per cent (4 farmers) received subsidy. It is noteworthy that land is the only security given for availing loan by all the beneficiaries in the three districts.

TABLE 6.11

AVERAGE AMOUNT OF SUBSIDY RECEIVED BY THE BENEFICIARY & NON-BENEFICIARY AND DETAILS OF SECURITY

DISTRICT	TYPE		TYPE OF SECURITY		SUBSIDY RECEIVED	AVERAGE AMOUNT OF SUBSIDY IN RS
			LAND	NON-LAND		
PATHANAMTHITTA	BENEF	X	12.00	0.00	6.00	1655.33
		%	100.00	0.00	50.00	
	NON-BEN	X	0.00	0.00	0.00	0.00
		%	0.00	0.00	0.00	
ERNAKULAM	BENEF	X	18.00	0.00	7.00	1803.43
		%	100.00	0.00	38.89	
	NON-BEN	X	0.00	0.00	0.00	0.00
		%	0.00	0.00	0.00	
PALAKKAD	BENEF	X	38.00	0.00	16.00	1509.50
		%	100.00	0.00	42.11	
	NON-BEN	X	0.00	0.00	4.00	1530.00
		%	0.00	0.00	33.33	
GRAND TOTAL	BENEF	X	68.00	0.00	29.00	1656.09
		%	100.00	0.00	42.65	
	NON-BEN	X	0.00	0.00	4.00	510.00
		%	0.00	0.00	18.18	

SOURCE : SURVEY DATA

INDEX : X = FREQUENCY

The classification of beneficiaries on the basis of commitment-disbursement gap and the related particulars are given in Table 6.12. The table reveals that the commitment-disbursement gap of the sample beneficiaries amounts to Rs.40626/- and the gap percentage, 5.96. The agency-wise classification shows that the gap is high with SLDB (8.91 per cent) compared with CB (1.23 per cent). The district-wise comparison shows that the gap is high in PTA (10.36 per cent) whereas it is 5.05 per cent in PKD and 4.97 per cent in EKM. Table 6.12 further shows that in the case of 16 out of 68 sample beneficiaries (23.53 per cent) there is commitment-disbursement gap. The reasons for the gap are (i) non availing of the amount committed as there is no need for money at the later stage of the scheme, (ii) higher interest rate structure (37.50 per

TABLE : 6.12

**CLASSIFICATION OF THE BENEFICIARY ON THE BASIS OF COMMITMENT --
DIBURSEMENT GAP AND THE RELATED PARTICULARS**

DISTRICT	BANK	COMMITTED AMOUNT	DISBURSED AMOUNT	GAP	GAP %	REASONS FOR THE GAP						TOTAL X	TOTAL %
						HIGH INTEREST X	HIGH INT %	NO NEED X	NO NEED %	DELAY X	DELAY %		
PATHANAMTHITTA	CB	40,691.00	40,691.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
	SLDB	78,973.00	66,573.00	12,400.00	15.70	0.00	0.00	1.00	100.00	0.00	0.00	1	100
	TOTAL	119,664.00	107,264.00	12,400.00	10.36	0.00	0.00	1.00	100.00	0.00	0.00	1	100
ERNAKULAM	CB	70,877.00	69,377.00	1,500.00	2.12	0.00	0.00	1.00	100.00	0.00	0.00	1	100
	SLDB	95,960.00	89,160.00	6,800.00	7.09	0.00	0.00	1.00	100.00	0.00	0.00	1	100
	TOTAL	166,837.00	158,537.00	8,300.00	4.97	0.00	0.00	2.00	100.00	0.00	0.00	2	100
PALAKKAD	CB	150,226.00	148,500.00	1,726.00	1.15	2.00	28.57	3.00	42.86	2.00	28.57	7	100
	SLDB	244,700.00	226,500.00	18,200.00	7.44	4.00	66.66	1.00	16.67	1.00	16.67	6	100
	TOTAL	394,926.00	375,000.00	19,926.00	5.05	6.00	46.15	4.00	30.77	3.00	23.08	13	100
GRAND TOTAL	CB	261,794.00	258,568.00	3,226.00	1.23	2.00	25.00	4.00	50.00	2.00	25.00	8	100
	SLDB	419,633.00	382,233.00	37,400.00	8.91	4.00	50.00	3.00	37.50	1.00	12.50	8	100
	TOTAL	681,427.00	640,801.00	40,626.00	5.96	6.00	37.50	7.00	43.75	3.00	18.75	16	100

SOURCE : SURVEY DATA

INDEX : C.B.--COMMERCIAL BANK , SLDB -- STATE LAND DEVELOPMENT BANK

X : FREQUENCY

TABLE : 6.13

TIME LAG BETWEEN DATE OF APPLICATION AND DATE OF SANCTIONING OF LOAN

DISTRICT	(DURATION OF DELAY IN MONTHS)														
	< 1		1 - 2		2 - 3		3 - 4		4 - 5		> 5		TOTAL		
	X	%	X	%	X	%	X	%	X	%	X	%	X	%	
PATHANAMTHITTA	C.B	0.00	0.00	3.00	50.00	3.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00	100.00
	S.L.D.B	0.00	0.00	2.00	33.33	3.00	50.00	0.00	0.00	1.00	16.67	0.00	0.00	6.00	100.00
	TOTAL	0.00	0.00	5.00	41.67	6.00	50.00	0.00	0.00	1.00	8.33	0.00	0.00	12.00	100.00
ERNAKULAM	C.B	4.00	44.44	1.00	11.11	2.00	22.22	2.00	22.22	0.00	0.00	0.00	0.00	9.00	100.00
	S.L.D.B	1.00	11.11	1.00	11.11	5.00	55.56	1.00	11.11	0.00	0.00	1.00	11.11	9.00	100.00
	TOTAL	5.00	27.78	2.00	11.11	7.00	38.89	3.00	16.67	0.00	0.00	1.00	5.56	18.00	100.00
PALAKKAD	C.B	0.00	0.00	0.00	0.00	15.00	78.95	4.00	21.05	0.00	0.00	0.00	0.00	19.00	100.00
	S.L.D.B	0.00	0.00	1.00	5.26	16.00	84.21	1.00	5.26	0.00	0.00	1.00	5.26	19.00	100.00
	TOTAL	0.00	0.00	1.00	2.63	31.00	81.58	5.00	13.16	0.00	0.00	1.00	2.63	38.00	100.00
GRAND TOTAL	C.B	4.00	11.76	4.00	11.76	20.00	58.82	6.00	17.65	0.00	0.00	0.00	0.00	34.00	100.00
	S.L.D.B	1.00	2.94	4.00	11.76	24.00	70.59	2.00	5.88	1.00	2.94	2.00	5.88	34.00	100.00
	TOTAL	5.00	7.35	8.00	11.76	44.00	64.71	8.00	11.76	1.00	1.47	2.00	2.94	68.00	100.00

SOURCE : SURVEY DATA

INDEX : C.B.-- COMMERCIAL BANK ,
 SLDB -- STATE LAND DEVELOPMENT BANK
 X = FREQUENCY

cent) and its frequent change (iii) delays on the part of the bank (18.75 per cent). The commitment-disbursement gap on account of non availing accounted to 43.75 per cent. Table 6.12 provides more detailed information at the district level.

Details regarding the time taken to sanction the loans are given in Table 6.13. The table reveals that of the 68 sample beneficiaries, 44 (64.71 per cent) had to face a time lag between two to three months. Those who experienced one to two months and three to four months time lag respectively constitute 11.76 per cent each. Around 7.35 per cent of the sample beneficiaries experienced a time lag of less than one month and 2.94 per cent experienced a lag more than five months. The time taken by NABARD to sanction the CB and SLDB applications are also highlighted here. The district-wise trend shows that majority of the farmers in all the three districts faced a time lag between two to three months. District-wise and agency-wise details also can be had from table 6.13.

SECTION IV

INFRASTRUCTURAL PARTICULARS

This section explains the Infrastructural Particulars. Farmer's access to infrastructural facilities, their experience and knowledge of NABARD refinance, the impact of follow-up action by officials and the beneficiaries opinion on direct financing by NABARD are analysed in this section.

Table 6.14 gives details of farmer's access to infrastructural facilities. In general 91.18 per cent (62) of the total sample population

TABLE : 6. 14**FARMERS' ACCESS TO INFRASTRUCTURAL FACILITIES**

DISTRICT	TYPE OF FARMER	ELECTRICITY/ DIESEL		PLANTING MATERIAL		TRAINING		EXTENSION SERVICE	
		X	%	X	%	X	%	X	%
PATHANAMTHITTA	BENEF	11.00	91.67	10.00	83.33	11.00	91.67	2.00	16.67
	NON-BEN	4.00	100.00	4.00	100.00	4.00	100.00	0.00	0.00
ERNAKULAM	BENEF	18.00	100.00	12.00	66.67	8.00	44.44	2.00	11.11
	NON-BEN	6.00	100.00	6.00	100.00	4.00	66.67	0.00	0.00
PALAKKAD	BENEF	33.00	86.84	35.00	92.11	33.00	86.84	32.00	84.21
	NON-BEN	11.00	91.67	12.00	100.00	12.00	100.00	1.00	8.33
GRAND TOTAL	BENEF	62.00	91.18	57.00	83.82	52.00	76.47	36.00	52.94
	NON-BEN	21.00	95.45	22.00	100.00	20.00	90.90	1.00	4.55

SOURCE : SURVEY DATA

INDEX: X = FREQUENCY

have easy accessibility to electricity/diesel for operating pumpsets. It can also be seen that 83.82 per cent (57) availed improved seeds, fertilisers and pesticides. Of the total MI beneficiaries 76.47 per cent (52) got training in management of asset, and 52.94 per cent (36) received extension services. The district-wise study shows that all the sample beneficiary farmers in EKM have easy access to electricity/diesel. In PTA it is 91.67 per cent and in PKD, 86.84 per cent. With respect to availability of improved seeds, fertilisers and pesticides PKD stands first (92.11 per cent). This is followed by PTA 83.33 per cent and 66.67 per cent in EKM. The district-wise details regarding availability of training in management of assets and extension services can be had from table 6.14. Similar details for the non-beneficiary farmers show that there is easy availability of electricity/diesel in EKM and PTA (100 per cent) while in PKD only 91.67 per cent of the farmers have access to electricity. There is 100 per cent availability of improved seeds, fertilisers and pesticides in the three districts though the extension services are poor.

TABLE : 6.15

CLASSIFICATION OF BENEFICIARIES ON THE BASIS OF EXPERIENCE AND KNOWLEDGE OF NABARD REFINANCE

DISTRICT		MORE THAN ONE BANK	TYPE OF BANK BETTER		REFINANCE KNOW.		TOTAL
			COM. BANK	SLDB	YES	NO	
PATHANAMTHITTA	X	6.00	3.00	3.00	10.00	2.00	12.00
	%	50.00	50.00	50.00	83.33	16.67	100.00
ERNAKULAM	X	3.00	1.00	2.00	14.00	4.00	18.00
	%	16.67	33.33	66.67	77.78	22.22	100.00
PALAKKAD	X	25.00	6.00	19.00	26.00	12.00	38.00
	%	65.79	24.00	76.00	68.42	31.58	100.00
GRAND TOTAL	X	34.00	10.00	24.00	50.00	18.00	68.00
	%	50.00	29.41	70.59	73.53	26.47	100.00

SOURCE : SURVEY DATA

INDEX : X = FREQUENCY

Classification of the beneficiaries on the basis of their experience and knowledge of NABARD refinance is given in Table 6.15. From the table it can be seen that 50 per cent (34) of the sample beneficiaries took NABARD refinance from more than one bank. Around 70.59 per cent of them opined that SLDB is a better agency institution. Nearly 29.41 per cent hold the view that CB is better. Of the total sample beneficiaries only 73.53 per cent are aware of NABARD refinance facility. The same trend is visible in the districts except for some minor variations in PTA and EKM.

Table 6.16 explains the impact of follow - up action by officials. The officials of the agency banks viz, CBs and SLDBs visited 69.12 per cent (47) of the sample households once in a year. In the case of 5.88 per cent (4) occasional visits are made. No visit is made in the case of 25 per cent (17) of the farmers. NABARD's officials visited only 17.65 per cent (12) of the total beneficiary farmers and that too only once in a year. Table 6.16 also indicates that bank officials' visits have positive effect. This is evident from the reaction of 94.12 per cent of the beneficiaries. Table 6.16 gives explanation for the districts of PTA, EKM and PKD.

TABLE :6.16.

DISTRICT	TYPE		PERIODICITY OF VISIT			** IMPACT OF VISIT			TOTAL
			ONCE	OCCASIONAL	NEVER	POSITIVE	NEGATIVE		
PATHANAMTHITTA	AGENCY	X	5.00	0.00	7.00	X	11.00	1.00	12.00
	VISIT	%	41.67	0.00	58.33	%	91.67	8.33	100.00
	NABARD	X	1.00	0.00	11.00				
	VISIT	%	8.33	0.00	91.67				
ERNAKULAM	AGENCY	X	12.00	1.00	5.00	X	15.00	3.00	18.00
	VISIT	%	66.67	5.56	27.78	%	83.33	16.67	100.00
	NABARD	X	2.00	0.00	16.00				
	VISIT	%	11.11	0.00	88.89				
PALAKKAD	AGENCY	X	30.00	3.00	5.00	X	38.00	0.00	38.00
	VISIT	%	78.95	7.89	13.16	%	100.00	0.00	100.00
	NABARD	X	9.00	0.00	29.00				
	VISIT	%	23.68	0.00	76.32				
GRAND TOTAL	AGENCY	X	47.00	4.00	17.00	X	64.00	4.00	68.00
	VISIT	%	69.12	5.88	25.00	%	94.12	5.88	100.00
	NABARD	X	12.00	0.00	56.00				
	VISIT	%	17.65	0.00	82.35				

SOURCE : SURVEY DATA

INDEX : X = FREQUENCY ,
OCCASIONAL MEANS 2 TO 3 TIMES

TABLE :6.17**FARMERS OPINION ON DIRECT FINANCING BY NABARD**

DISTRICT		FOR	AGAINST	NO SUGGESTION	TOTAL
PATHANAMTHITTA	X	5.00	3.00	4.00	12.00
	%	41.67	25.00	33.33	100.00
ERNAKULAM	X	6.00	6.00	6.00	18.00
	%	33.33	33.33	33.33	100.00
PALAKKAD	X	37.00	0.00	1.00	38.00
	%	97.37	0.00	2.63	100.00
GRAND TOTAL	X	48.00	9.00	11.00	68.00
	%	70.59	13.24	16.18	100.00

SOURCE : SURVEY DATA

INDEX : X = FREQUENCY

Farmers were asked about their opinion on direct financing by NABARD. Their opinions are presented in Table 6.17. The table reveals that 70.59 per cent (48) of the sample beneficiaries are in favour of direct financing while 13.24 per cent (9) are against it. Around 16.18 per cent (11) have no opinion on it. The same trend can be seen in PTA also. It is interesting to note that in EKM the farmers who spoke for and against direct financing and those with no suggestion accounted for 33.33 per cent each. In PKD all but one spoke in favour of direct financing.

SECTION V
OPPORTUNITY COST PARTICULARS

This section analyses the opportunity cost involved with respect to the scheme. The opportunity cost is analysed with reference to alternative work, income and employment of the sample beneficiaries. The consideration given to the choice preference of the beneficiaries is also studied in this section.

TABLE :6.18.

NET GAIN DERIVED ON THE BASIS OF ALTERNATIVE WORK , INCOME AND EMPLOYMENT

DISTRICT		MINOR IRRIGATION. POSSIBILIY		INCOME			EMPLOYMENT			TOTAL
		YES	NO	LOWER	SAME	HIGHER	LOWER	SAME	HIGHER	
PATHANAMTHITA	X	5.00	7.00	0.00	3.00	9.00	0.00	12.00	0.00	12.00
	%	41.67	58.33	0.00	25.00	75.00	0.00	100.00	0.00	100.00
ERNAKULAM	X	5.00	13.00	6.00	7.00	5.00	8.00	8.00	2.00	18.00
	%	27.78	72.22	33.33	38.89	27.78	44.44	44.44	11.11	100.00
PALAKKAD	X	15.00	23.00	18.00	20.00	0.00	17.00	21.00	0.00	38.00
	%	39.47	60.53	47.37	52.63	0.00	44.74	55.26	0.00	100.00
GRAND TOTAL	X	25.00	43.00	24.00	30.00	14.00	25.00	41.00	2.00	68.00
	%	36.76	63.24	35.29	44.12	20.59	36.76	60.29	2.94	100.00

SOURCE : SURVEY DATA

INDEX : X = FREQUENCY

The opportunity cost with reference to alternative work is presented in Table 6.18. The table shows that only in the case of 63.24 per cent (43 farmers) the loan is an absolute necessity to go in for minor irrigation scheme. Twenty five farmers (36.76 per cent) would have gone for minor irrigation even without the loan. From the income angle only 35.29 per cent of the sample beneficiaries (24) stated that their alternative income would have been lower without the loan. Around 44.12 per cent (30) of the sample beneficiaries claimed that their alternative income would have been the same even if the scheme was not there. It is

interesting to note that 20.59 per cent of the sample beneficiaries claimed that their alternative income would have been higher if the scheme were not implemented. The opportunity cost particulars on alternative employment indicates that 36.76 per cent (25) of the farmers stated the possibility of a lower alternate employment, while 60.29 per cent (41) claimed to have had the same employment. A minute share of the sample beneficiaries (2.94 per cent) stated the possibility of a higher alternative employment in the absence of the scheme. Table 6.18 explains the opportunity cost particulars in detail with reference to the three districts. The district-wise trend is more or less the same. It has marked changes in PTA district. It should be noted in particular that in PKD district the opportunity cost from the alternative employment is negligible.

TABLE : 6.19

CONSIDERATION TO CHOICE PREFERENCE OF BENEFICIARIES

DISTRICT		CHOICE PREFERENCE		TOTAL
		CONSIDERED	NOT CONSIDERED	
PATHANAMTHITTA	X	10.00	2.00	12.00
	%	83.33	16.67	100.00
ERNAKULAM	X	16.00	2.00	18.00
	%	88.89	11.11	100.00
PALAKKAD	X	34.00	4.00	38.00
	%	89.47	10.53	100.00
GRAND TOTAL	X	60.00	8.00	68.00
	%	88.24	11.76	100.00

SOURCE : SURVEY DATA

The details regarding the choice preference of the beneficiaries is given in Table 6.19. Of the 68 sample beneficiaries only 88.24 per cent (60) got the scheme of their choice. Same is the case at the district level. For example, in PKD 89.47 per cent (34) of the total population received loans according to their choice. Table 6.19 also explains the situations in PTA and EKM.

SECTION VI
IMPACT OF THE SCHEME

This section deals with the Impact of the Scheme. Details regarding the amount invested in minor irrigation, the contribution of NABARD in it, the land-use pattern of beneficiaries and non-beneficiaries, cost incurred by them, role of hired labour and own labour component in total cost, the net incremental income derived by the beneficiaries, the incremental output-cost ratio per unit and the incremental income-investment ratio per unit are studied. The change in income levels of the beneficiaries are analysed using 't' test and the reasons for change in income of the beneficiaries are categorised as income through increment in productivity (IP), increment through cropping intensity (ICI), increment through cropping pattern (ICP) and increment through farm practices (IFP). Information on the farmer's opinion of the type of credit assessment by NABARD is included in the last part of this section.

TABLE :6.20.

***INVESTMENT MADE PER UNIT OF MINOR IRRIGATION BY THE
SELECTED FARMERS***

DISTRICT	TYPE OF FARMER	INVESTMENT MADE	AMOUNT IN Rs.
			NABARD PORTION PER UNIT
PATHANAMTHITTA	BENF	13,973.83	8,938.67
	NON-BENF.	26,212.75	
ERNAKULAM	BENF	18,063.33	8,807.67
	NON-BENF.	11,428.17	
PALAKKAD	BENF	33,607.89	9,868.42
	NON-BENF.	40,495.00	
AVERAGE	BENF	26,028.32	9,423.54
	NON-BENF.	29,970.91	

SOURCE : SURVEY DATA

Table 6.20 explains the investment made in minor irrigation by beneficiaries and non-beneficiaries and the NABARD's contribution to total investment. The total amount of investment per unit made by the 68 sample beneficiary farmers is Rs.26,028.32/- and the NABARD component of investment per unit amounted to Rs.9,423.54/-. The sample beneficiary farmers in PTA invested Rs.13,973.83/- while in EKM they invested Rs.18,063.33/- and in PKD, Rs.33,607.89/-. The NABARD's contribution to investment amounted to Rs.8,938.67/- in PTA, Rs.8,807.67/- in EKM and Rs.9,868.42/- in PKD district. For the sample non-beneficiaries the total quantum of investment made in minor irrigation per unit of investment is Rs.29,970.91/-. The district-wise data can be had from Table 6.20.

The land-use pattern of the beneficiaries in the pre and post-loan periods is given in Table 6.21. The data show that in the post-loan period the sample beneficiaries have 242 acres under cultivation. Of this 72.55 per cent (175.57 acres) are irrigated. In the pre loan period 91.98 per cent (219.56 acres) of the total land holding (238.70 acres) were not irrigated. The crop-wise estimate shows that in the post-loan period 31.06 per cent (75.16 acres) is under coconut cultivation, 29.53 per cent (71.47 acres) under rubber cultivation, 17.04 per cent (41.24 acres) under banana, 5.50 per cent (13.32 acres) under arecanut, 0.39 per cent (0.94 acres) under tapioca and 16.48 percent (39.87 acres) under 'others'. The crop-wise classification of land is more or less similar in the pre and post-loan periods. This means that irrigation has not brought about much change in cropping pattern. The district-wise trend is similar in the post-loan period with respect to PKD but is different in EKM and PTA. In EKM and PTA 'rubber' crop is pre-dominant.

TABLE : 6.21
LAND USE PATTERN OF THE BENEFICIARIES IN THE PRE-AND POST-LOAN PERIODS

DISTRICT	PERIOD	LAND	IRRIGATED	UNIRRIGATED	RUBBER	COCONUT	BANANA	ARECANUT	TAPIOCA	OTHERS	TOTAL
PATHANAMTHITTA	PRE	X	2.99	24.96	15.40	6.15	3.50	1.15	0.00	1.75	27.95
		%	10.70	89.30	55.10	22.00	12.52	4.11	0.00	6.26	100.00
	POST	X	21.60	9.50	17.00	7.78	3.50	2.35	0.00	0.47	31.10
		%	69.45	30.55	54.66	25.02	11.25	7.56	0.00	1.51	100.00
ERNAKULAM	PRE	X	13.15	13.20	7.64	7.71	4.95	1.19	0.00	4.86	26.35
		%	49.91	50.09	28.99	29.26	18.79	4.52	0.00	18.44	100.00
	POST	X	24.35	2.00	13.22	6.63	3.14	1.69	0.00	1.67	26.35
		%	92.41	7.59	50.17	25.16	11.92	6.41	0.00	6.34	100.00
PALAKKAD	PRE	X	3.00	181.40	29.25	61.02	31.93	13.05	0.94	48.21	184.40
		%	1.63	98.37	15.86	33.09	17.32	7.08	0.51	26.14	100.00
	POST	X	129.62	54.93	41.25	60.75	34.60	9.28	0.94	37.73	184.55
		%	70.24	29.76	22.35	32.92	18.75	5.03	0.51	20.44	100.00
GRAND TOTAL	PRE	X	19.14	219.56	52.29	74.88	40.38	15.39	0.94	54.82	238.70
		%	8.02	91.98	21.91	31.37	16.92	6.45	0.39	22.97	100.00
	POST	X	175.57	66.43	71.47	75.16	41.24	13.32	0.94	39.87	242.00
		%	72.55	27.45	29.53	31.06	17.04	5.50	0.39	16.48	100.00

SOURCE : SURVEY DATA
INDEX : " OTHERS " MEANS PEPPER , GINGER , CARDOMUM , OTHER SPICES , CASHEW NUT
X = FREQUENCY OF LAND IN ACRES

TABLE : 6.22.1**DETAILS OF PER UNIT COST INCURRED BY BENEFICIARIES IN THE PRE-AND POST-
LOAN PERIODS**

DISTRICT			MC	LC	AOC	TC
PATHANAMTHITA	PRE	X	3,777.00	5,312.25	305.08	9,394.33
		%	40.21	56.55	3.25	100.00
	POST	X	5,920.00	7,691.17	362.67	13,973.84
		%	42.36	55.04	2.60	100.00
ERNAKULAM	PRE	X	8,998.33	5,097.22	1,300.00	15,395.55
		%	58.45	33.11	8.44	100.00
	POST	X	8,530.00	7,351.67	2,181.67	18,063.34
		%	47.22	40.70	12.08	100.00
PALAKKAD	PRE	X	7,694.58	17,341.24	851.45	25,887.27
		%	29.72	66.99	3.29	100.00
	POST	X	10,074.00	22,420.34	1,113.55	33,607.89
		%	29.98	66.71	3.31	100.00
AVERAGE	PRE	X	7,348.35	11,977.41	873.76	20,199.52
		%	36.38	59.30	4.33	100.00
	POST	X	8,932.24	15,832.31	1,263.78	26,028.33
		%	34.32	60.83	4.86	100.00

SOURCE : SURVEY DATA

INDEX : MC = MATERIAL COST , LC = LABOUR COST, AOC =
ANNUAL OVERHEAD COST, TC = TOTAL COST
X = AMOUNT IN
RUPEES

Details regarding the cost incurred by beneficiaries in the pre - and post-loan periods is given in Table 6.22.1. For the sample beneficiaries the total cost (TC) per unit of investment is Rs.26,028.33/- of which 60.83 per cent is Labour Cost (LC), 34.32 per cent, Material Cost (MC) and 4.86 per cent Annual Overhead Cost (AOC). The same trend is seen in the pre-loan period also. The districts of PTA and PKD follow the same macro trend. In EKM the TC per unit of investment amounted to Rs.18,063.34/- in the post-loan period of which a higher percentage (47.22 per cent) was contributed by MC followed by LC (40.70 per cent) and 12.08 per cent by AOC. The pre-loan period also shows the same pattern in EKM.

TABLE : 6.22.2**DETAILS OF COST INCURRED BY NON-BENEFICIARIES PER UNIT OF INVESTMENT**

DISTRICT		MC	LC	AOC	TC
PATHANAMTHITTA	X	8,428.50	16,650.00	1,134.25	26,212.75
	%	32.15	63.52	4.33	100.00
ERNAKULAM	X	2,670.50	8,472.00	285.67	11,428.17
	%	23.37	74.13	2.50	100.00
PALAKKAD	X	9,591.75	29,837.50	1,065.75	40,495.00
	%	23.69	73.68	2.63	100.00
AVERAGE	X	7,492.64	21,612.82	865.45	29,970.91
	%	25.00	72.11	2.89	100.00

SOURCE : SURVEY DATA

INDEX : MC = MATERIAL COST , LC = LABOUR COST, AOC = ANNUAL OVLRIHILAD
X = AMOUNT IN RUPEES

Table 6.22.2 gives details with respect to cost incurred by the non-beneficiaries. The total cost incurred per unit of investment by the sample non-beneficiaries amounted to Rs.29,970.91/- of which 72.11 per cent is LC, 25 per cent, MC and 2.89 per cent, AOC. The same trend is seen in PTA, EKM and PKD.

TABLE :6.23.1.**COMPARISON OF THE BENEFICIARY'S IMPUTED COST OF LABOUR WITH THE ACTUAL COST OF LABOUR IN THE PRE-AND POST-LOAN PERIODS**

AMOUNT IN RS.					
DISTRICT	PERIOD		ACL	ICL	TCL
PATHANAMTHITTA	PRE	X	63,747.00	0.00	63,747.00
		%	100.00	0.00	100.00
	POST	X	92,294.00	0.00	92,294.00
		%	100.00	0.00	100.00
ERNAKULAM	PRE	X	91,750.00	0.00	91,750.00
		%	100.00	0.00	100.00
	POST	X	132,330.00	0.00	132,330.00
		%	100.00	0.00	100.00
PALAKKAD	PRE	X	323,555.00	335,412.00	658,967.00
		%	49.10	50.90	100.00
	POST	X	423,151.00	428,822.00	851,973.00
		%	49.67	50.33	100.00
GRAND TOTAL	PRE	X	479,052.00	335,412.00	814,464.00
		%	58.82	41.18	100.00
	POST	X	647,775.00	428,822.00	10,765,97.00
		%	60.17	39.83	100.00

SOURCE : SURVEY DATA

INDEX : ACL = ACTUAL COST OF LABOUR (HIRED LABOUR),
ICL = IMPUTED COST OF LABOUR (OWN LABOUR) ,
TCL = TOTAL COST OF LABOUR.

A comparison of the Imputed Cost of Labour (ICL) (Own Labour) with the Actual Cost of Labour (ACL) (Hired Labour) in the pre and post-loan periods are given in Table 6.23.1. The Total Cost of Labour (TCL) in the post-loan period is Rs.10,76,597/- of which 60.17 per cent constituted the Hired Labour component and 39.83 per cent, Own Labour. In the pre-loan period also, the same trend is visible. In PKD in the post-loan period, the TCL amounted to Rs.8,51,973/- of which the own labour component accounted for 50.33 per cent and hired labour, 49.67 per cent. In PTA and EKM only hired labour is used both in the pre and post-loan periods.

TABLE :6.23.2.

COMPARISON OF THE NON-BENEFICIARY'S IMPUTED COST OF LABOUR WITH ACTUAL COST OF LABOUR

AMOUNT IN RS.				
DISTRICT		ACL	ICL	TCL
PATHANAMTHITTA	X	66,600.00	0.00	66,600.00
	%	100.00	0.00	100.00
ERNAKULAM	X	50,832.00	0.00	50,832.00
	%	100.00	0.00	100.00
PALAKKAD	X	127,890.00	230,160.00	358,050.00
	%	35.72	64.28	100.00
GRAND TOTAL	X	245,322.00	230,160.00	475,482.00
	%	51.59	48.41	100.00

SOURCE : SURVEY DATA

INDEX : ACL = ACTUAL COST OF LABOUR (HIRED LABOUR),
ICL = IMPUTED COST OF LABOUR (OWN LABOUR) ,
TCL = TOTAL COST OF LABOUR.

Table 6.23.2 gives a comparison of the sample non-beneficiaries ICL with ACL. The TCL amounted to Rs.4,75,482/- of which 51.59 per cent is hired labour and 48.41 per cent, own labour. The non-beneficiaries in PKD have a higher component of own labour (64.28 per cent) than hired labour (35.72 per cent) as is seen in the case of the beneficiaries. In PTA and EKM only hired labour are used by the non-beneficiaries.

TABLE 6.24.1.**CLASSIFICATION OF BENEFICIARIES ON THE BASIS OF THEIR PER UNIT PRE-AND POST-LOAN INCOME**

DISTRICT	FARMER CATEGORY	PRE NET INCOME	POST NET INCOME	AMT. IN RS.	
				N.I.I.(RS.)	N.I.I.(%)
PATHANAMTHITTA	MARGINAL	5,781.33	7,406.83	1,625.50	28.12
	SMALL	17,673.75	23,354.00	5,680.25	32.14
	MEDIUM	25,609.50	41,248.50	15,639.00	61.07
	LARGE	0.00	0.00	0.00	0.00
	AVERAGE	13,050.17	18,362.83	5,312.66	40.71
ERNAKULAM	MARGINAL	14,835.00	30,033.13	15,198.13	102.45
	SMALL	39,000.00	54,990.00	15,990.00	41.00
	MEDIUM	0.00	0.00	0.00	0.00
	LARGE	0.00	0.00	0.00	0.00
	AVERAGE	17,520.00	32,806.11	15,286.11	87.25
PALAKKAD	MARGINAL	6,785.22	15,997.22	9,212.00	135.77
	SMALL	18,800.47	27,391.47	8,591.00	45.70
	MEDIUM	40,850.27	56,412.91	15,562.64	38.10
	LARGE	146,380.67	179,785.00	33,404.33	22.82
	AVERAGE	32,409.71	45,124.84	12,715.13	39.23
AVERAGE	MARGINAL	10,745.65	21,578.90	10,833.25	100.82
	SMALL	20,509.62	29,250.86	8,741.24	42.62
	MEDIUM	38,505.54	54,079.92	15,574.38	40.45
	LARGE	146,380.67	179,785.00	33,404.33	22.82
AVERAGE		25,051.93	37,141.29	12,089.36	48.26

SOURCE : SURVEY DATA

Table 6.24.1 presents the classification of beneficiaries on the basis of their per unit net incremental income. If we consider the beneficiaries as a whole, the net incremental income per unit amounted to Rs.12,089.36/- (48.26 per cent). The net incremental income in Rupee terms is the highest for large farmers i.e. Rs.33,404.33/- and the lowest for small farmers i.e. Rs.8,741.24/-. In percentage terms the net incremental income is highest for marginal farmers (100.82 per cent) followed by small farmers (42.62 per cent) and medium farmers (40.45 per cent). The data regarding net incremental income (NII) in Rupee terms in PKD follows a pattern similar to the general trend. But the situation is different in PTA and EKM. In PTA there are no large farmers while in EKM there are no medium and large farmers. In percentage terms the district-wise trend of NII shows that in EKM and PKD the marginal farmers lead, (102.45 per cent and 135.77

per cent respectively) but in PTA it is high for medium farmers (61.07 per cent). The district-wise analysis shows that the net incremental income in Rupee terms (Rs.15,286.11/-) and in percentage terms (87.25 per cent) is high in EKM while in percentage terms it is the lowest in PKD (39.23 per cent) and in Rupee terms it is the lowest in PTA (Rs.5,312.66/-).

TABLE 6.24.2.

CLASSIFICATION OF NON-BENEFICIARIES ON THE BASIS OF THEIR PER UNIT NET INCOME FROM MINOR IRRIGATION

AMOUNT IN RS	
DISTRICT	PER UNIT NET INCOME (AMOUNT IN Rs.)
PATHANAMTHITTA	18,223.50
ERNAKULAM	14,190.50
PALAKKAD	37,144.92
AVERAGE	27,444.36

SOURCE : SURVEY DATA

Classification of non-beneficiaries on the basis of their per unit net income from minor irrigation is given in Table 6.24.2. The table shows that the total per unit net income of the sample non-beneficiaries amounted to Rs.27,444.36/-. The district-wise comparison shows that the per unit net income is the highest in PKD (Rs.37,144.92/-) whereas it is Rs.18,223.50/- in PTA and Rs.14,190.50/- in EKM.

The per unit incremental output-cost ratio is given in Table 6.25. As far as the three districts are concerned, the incremental output-cost ratio is given as 0.46:1. The purpose-wise incremental output-cost ratio is also given in the Table. We find that the ratio is high for the 'Pumpset' (PS) scheme (0.89:1) whereas it is 0.38:1 for the 'New Well with Pumpset' (NW with Ps) scheme and 0.21:1 for the 'New Well'

(NW) scheme alone. District-wise study shows that the same trend can be seen only in PKD. In PTA, the ratios are 0.39:1 for NW with Ps, 0.39:1 for NW, and 0.17:1 for PS. In EKM, the ratios are 1.29:1, 0.35:1 and 0.28:1 for PS, NW and NW with Ps respectively. In brief, the district total shows that the ratio is the highest for EKM (0.84:1) whereas it is the same for PTA and PKD (0.38:1 each).

TABLE 6.25.

INCREMENTAL OUTPUT COST RATIO PER UNIT OF INVESTMENT

DISTRICT	SCHEME CATEGORY	INCREMENTAL OUTPUT/UNIT	AMOUNT IN Rs.	
			COST PER UNIT	I.O.C. RATIO
PATHANAMTHITTA	NEW WELL	632.00	1,625.50	0.39
	PUMPSET	1,789.00	10,341.00	0.17
	N.W. WITH P.S.	6,744.33	17,121.56	0.39
	AVERAGE	5,312.67	13,973.83	0.38
ERNAKULAM	NEW WELL	7,490.00	21,600.00	0.35
	PUMPSET	26,400.00	20,466.67	1.29
	N.W. WITH P.S.	4,690.00	16,964.62	0.28
	AVERAGE	15,286.11	18,063.33	0.84
PALAKKAD	NEW WELL	7,445.00	39,727.33	0.19
	PUMPSET	26,400.00	36,151.00	0.73
	N.W. WITH P.S.	12,702.48	32,078.66	0.40
	AVERAGE	12,715.12	33,607.89	0.38
AVERAGE	NEW WELL	6,091.40	28,481.50	0.21
	PUMPSET	22,884.14	25,742.00	0.89
	N.W. WITH P.S.	9,608.65	25,586.57	0.38
	AVERAGE	12,089.36	26,028.32	0.46

SOURCE : SURVEY DATA

INDEX : IOC RATIO = INCREMENTAL OUTPUT COST RATIO

The farmer category-wise incremental income-investment ratio is given in Table 6.26. If three districts are taken together, the ratio works out to 0.46:1. The farmer category-wise classification shows that the ratio is the highest for marginal farmers (0.59:1) whereas it is 0.51:1 for large farmers, 0.45 for medium farmers and 0.33:1 for small farmers. The ratios for the district-wise total are the same as that in the Table 6.25. In PKD the ratios are 0.51:1, 0.43:1, 0.34:1 and 0.30:1 for LF, MEF, MF and SF respectively. Details on the ratios for the districts of PTA and EKM can be had from table 6.26.

TABLE 6.26

INCREMENTAL INCOME INVESTMENT RATIO PER UNIT OF MINOR IRRIGATION
(AMOUNT IN Rs.)

DISTRICT	FARMER CATEGORY	INVESTMENT /UNIT	INCR. INCOME/UNIT	I.I.I. RATIO
PATHANAMTHITA	MARGINAL	8,608.00	1,625.50	0.19
	SMALL	16,928.25	5,680.25	0.34
	MEDIUM	24,162.50	15,639.00	0.65
	LARGE	0.00	0.00	0.00
	TOTAL	13,973.83	5,312.67	0.38
ERNAKULAM	MARGINAL	16,940.00	15,198.13	0.90
	SMALL	27,050.00	15,990.00	0.59
	MEDIUM	0.00	0.00	0.00
	LARGE	0.00	0.00	0.00
	TOTAL	18,063.33	15,286.11	0.84
PALAKKAD	MARGINAL	26,991.67	9,212.00	0.34
	SMALL	29,053.13	8,591.00	0.30
	MEDIUM	36,480.55	15,562.64	0.43
	LARGE	65,696.67	33,404.33	0.51
	TOTAL	33,607.81	12,715.13	0.38
AVERAGE	MARGINAL	18,245.58	10,833.25	0.59
	SMALL	26,552.86	8,741.24	0.33
	MEDIUM	34,585.46	15,574.38	0.45
	LARGE	65,696.67	33,404.33	0.51
	TOTAL	26,028.32	12,089.36	0.46

SOURCE : SURVEY DATA

INDEX : I.I.I. RATIO = INCREMENTAL INCOME INVESTMENT RATIO

Table 6.27.1 highlights the change in income levels of the beneficiaries between the pre-and post-loan periods. The statistical significance of difference is tested by using the 't' test. In general, for all the districts together it is seen that there is a significant difference at one per cent level. The district level information shows that in PKD and EKM there is significant difference (at 1% level) in income levels of the beneficiaries while in PTA the difference is not significant.

Table 6.27.2 presents the change in income levels of the beneficiaries and non-beneficiaries. The cross sectional analysis between the beneficiaries and non-beneficiaries shows that there is no significant difference between the income levels of the two groups. The district-wise trend is the same except for EKM where there is significant difference (at 1 per cent level) between the two classes of farmers.

TABLE : 6.27.1

**CHANGE IN INCOME LEVELS OF THE BENEFICIARIES :
TESTING OF DIFFERENCE BETWEEN MEANS**

DISTRICT	AMT. IN RS.		
	MEAN VALUE BEFORE	MEAN VALUE AFTER	't' VALUE
PATHANAMTHITTA	13,050.17	18,362.83	1.33**
ERNAKULAM	17,520.00	32,806.11	4.9*
PALAKKAD	32,409.71	45,124.84	6.78*
AVERAGE	25,051.93	37,141.29	7.98*

SOURCE : SURVEY DATA

** NOT SIGNIFICANT

* SIGNIFICANT AT 1 % LEVEL

The percentage-wise change in the income levels of the sample beneficiaries as a result of IP, ICP and IFP are given in Table 6.28. The table highlights the fact that in the case of most of the farmers changes in income occurred as a result of IP (36.91 per cent) and ICP (36.07 per cent) followed by IFP (15.78 per cent) and the least through ICI (1.11 per cent). The rest of the increment in income is as a result of other factors. The district-wise comparison shows that most of the farmers in PTA and EKM experienced an increase in income as a result of IP 55.83 per cent

and 52.78 per cent respectively whereas in PKD the increment generated is mainly as a result of ICP (74.74 per cent) than any other variables.

TABLE :6.27.2

**DIFFERENCE IN INCOME LEVELS OF THE BENEFICIARIES AND NON-BENEFICIARIES.
TESTING OF DIFFERENCE BETWEEN MEANS**

DISTRICT	BENEF	NON-BENEF	AMOUNT IN RS.
	MEAN VALUE	MEAN VALUE	't' VALUE
PATHANAMTHITTA	18,362.83	18,223.50	0.26**
ERNAKULAM	32,806.11	14,190.50	3.37*
PALAKKAD	45,124.84	37,144.92	1.21**
AVERAGE	37,141.29	27,444.36	0.92**

SOURCE : SURVEY DATA

** NOT SIGNIFICANT

* SIGNIFICANT AT 1 % LEVEL

TABLE : 6.28

**PERCENTAGEWISE CHANGE IN THE INCOME LEVELS OF THE BENEFICIARIES
AS RESULT OF INCREMENT THROUGH PRODUCTIVITY (I.P.), INCREMENT THROUGH
CROPPING INTENSITY (I.C.I.), INCREMENT THROUGH CROPPING PATTERN (I.C.P.)
AND INCREMENT THROUGH FARM PRACTICES (I.F.P.)**

DISTRICT	CHANGE IN INCOME AS A RESULT OF				TOTAL
	I.P.	I.C.I.	I.C.P.	I.F.P.	
PATHANAMTHITTA	55.83	3.33	17.92	6.25	83.33
ERNAKULAM	52.78	0.00	15.56	20.56	88.90
PALAKKAD	2.11	0.00	74.74	20.53	97.38
AVERAGE	36.91	1.11	36.07	15.78	89.87

SOURCE : SURVEY DATA

Table 6.29 shows changes in employment levels of the sample beneficiary farmers. If we take all the sample beneficiaries together, the incremental own labour in mandays are 2,206 which amounts to Rs.93,410.00/- whereas incremental employment in mandays per hectare is estimated as 22.52 which amounts to Rs.953.78. The table clearly indicates that in PTA and EKM the sample beneficiary farmers did not make use of their own labour in cultivation. But this was different in the case of farmers in PKD. When the component of hired labour is taken, it can be seen that for all the sample farmers put together, the incremental employment generated in mandays came to 4,001.00 which amounted to

TABLE : 6.29

CHANGE IN EMPLOYMENT LEVELS OF THE BENEFICIARY

DISTRICT	OWN LABOUR				HIRED LABOUR			
	I.E.in M.D.	I.E.in M.D./Hctr	I.E. in Rs.	I.E. in Rs./Hctr	I.E.in M.D.	I.E.in M.D./Hctr	I.E. in Rs.	I.E. in Rs./Hctr
PATHANAMTHITTA	0.00	0.00	0.00	0.00	679.00	53.95	28,547.00	2,268.16
ERNAKULAM	0.00	0.00	0.00	0.00	963.50	90.35	40,580.00	3,805.43
PALAKKAD	2,206.00	29.54	93,410.00	1250.69	2,358.50	31.57	99,596.00	1,333.52
GRAND TOTAL /AVERAGE	2,206.00	22.52	93,410.00	953.78	4,001.00	40.85	168,723.00	1,722.78

SOURCE : SURVEY DATA

INDEX :

I.E.in M.D./Hctr

I.E. in Rs.

I.E. inRs./Hctr

= INCREMENT IN EMPLOYMENT IN MAN DAYS
 = INCREMENT IN EMPLOYMENT IN MAN DAYS PER HECTARE
 = INCREMENT IN EMPLOYMENT IN RUPEES
 = INCREMENT IN EMPLOYMENT IN RUPEES PER HECTARE

Rs.1,68,723.00/-. The per hectare incremental hired employment in mandays is estimated to be 40.85 which amounted to Rs.1722.78/-. The district-wise analysis shows that the per hectare incremental hired labour in mandays and in terms of Rupees is found to be the highest in PKD i.e. Rs.1,333.52/-and 31.57 mandays. The per hectare incremental mandays of hired employment was followed by that in EKM and PTA which were 90.35 and 53.95 respectively.

TABLE : 6.30**CHANGE IN ASSET POSITION OF THE SELECTED BENEFICIARIES**

AMOUNT IN Rs.				
DISTRICT		TYPE OF ASSETS		TOTAL INCREMENTAL ASSET PER UNIT
		INCREMENTAL LIVE STOCK ASSET PER UNIT	INCREMENTAL PHYSICAL ASSET PER UNIT	
PATHANAMTHITTA	X	4,078.33	9,041.67	13,120.00
	%	31.08	68.92	100.00
ERNAKULAM	X	3,070.00	10,200.00	13,270.00
	%	23.13	76.87	100.00
PALAKKAD	X	599.47	5,186.05	5,785.52
	%	10.36	89.64	100.00
AVERAGE	X	1,867.00	7,194.00	9,061.00
	%	20.60	79.40	100.00

SOURCE : SURVEY DATA X = AMOUNT IN RS

Table 6.30 gives details regarding the change in the asset position of the selected beneficiaries. In the case of the 68 beneficiary farmers, the increment in total assets per unit amounted to Rs.9,061/- of which 79.40 per cent (Rs.7,194/-) increment was generated as a result of increase in physical asset and the rest of the share 20.60 per cent (Rs.1,867/-) as a result of increase in livestock asset. The district-wise trend is similar to the general trend. The per unit increment in the asset position of the selected farmers is the highest in EKM (Rs.13,270/-) and the lowest in PKD (Rs.5,785.52/-) whereas it is Rs.13,120/- for PTA.

Details regarding the consequent changes of NABARD refinance on income, employment and indebtedness of the sample beneficiaries can be had from Table 6.31. With respect to the 68 sample beneficiaries 58 farmers (85.29 per cent) experienced some improvement in their income level in the post-loan period where as 9 farmers (13.24 per cent) experienced no change in their income levels. The income position of one farmer (1.47 per cent) has worsened in the post-loan period. The employment level shows a favourable change in the case of 62 farmers (91.18 per cent) and unfavourable change in the case of only one farmer (1.47 per cent). About 7.35 per cent of the farmers (5) did not experience any change in their employment levels. The element of indebtedness shows favourable change in the case of 39 farmers (57.35 per cent), no change with respect to 27 farmers (39.71 per cent) and an unfavourable change with respect to only 2 farmers (2.94 per cent). The district-wise analysis shows the similar macro trend for the variables (income, employment and indebtedness) except for a few variations in EKM and PKD.

Table 6.32 explains the impact of the loan on living standard and the additional income generated. The average figure shows that about 75 per cent (51) of the total population experienced better living conditions. The district-wise study shows the percentages as 41.67 in PTA, 66.67 in EKM and 89.47 in PKD. Of the 68 sample farmers, 59 generated additional income (86.76 per cent). For the districts of PTA, EKM and PKD it is 83.33 per cent, 66.67 per cent and 97.37 per cent respectively. Of the total beneficiary households, the element of cost saving is experienced in the case of 34 farmers (50.00 per cent). In EKM the percentage is 61.11 and in PKD it is 55.26, but in PTA only two farmers (16.67 per cent) could realise saving in cost.

TABLE 6.31**CONSEQUENT CHANGES OF NABARD ASSISTANCE ON INCOME , EMPLOYMENT AND INDEBTEDNESS OF BENEFICIARIES.**

DISTRICT	CHANGE	INCOME	EMPLOYMENT	INDEBTEDNESS
PATHANAMTHITTA	BETTER X	10.00	10.00	10.00
	%	83.33	83.33	83.33
	NO CHANGE X	1.00	1.00	1.00
	%	8.33	8.33	8.33
	WORSE X	1.00	1.00	1.00
	%	8.33	8.33	8.33
	TOTAL X	12.00	12.00	12.00
%	100.00	100.00	100.00	
ERNAKULAM	BETTER X	11.00	15.00	9.00
	%	61.11	83.33	50.00
	NO CHANGE X	7.00	3.00	9.00
	%	38.89	16.67	50.00
	WORSE X	0.00	0.00	0.00
	%	0.00	0.00	0.00
	TOTAL X	18.00	18.00	18.00
%	100.00	100.00	100.00	
PALAKKAD	BETTER X	37.00	37.00	20.00
	%	97.37	97.37	52.63
	NO CHANGE X	1.00	1.00	17.00
	%	2.63	2.63	44.74
	WORSE X	0.00	0.00	1.00
	%	0.00	0.00	2.63
	TOTAL X	38.00	38.00	38.00
%	100.00	100.00	100.00	
GRAND TOTAL	BETTER X	58.00	62.00	39.00
	%	85.29	91.18	57.35
	NO CHANGE X	9.00	5.00	27.00
	%	13.24	7.35	39.71
	WORSE X	1.00	1.00	2.00
	%	1.47	1.47	2.94
	TOTAL X	68.00	68.00	68.00
%	100.00	100.00	100.00	

SOURCE : SURVEY DATA

An assessment of the general impact of NABARD's refinance is presented in Table 6.33. The general trend shows that 79.41 per cent (54) of the total sample population considered NABARD's refinance as a general macro exercise which assessed credit requirement only on the basis of the unit cost norm. The percentage of farmers who considered NABARD's refinancing as a grass-root level exercise accounted to only 20.59 per cent (14). The data regarding the information received at the district level is similar to the general trend.

TABLE :6.32.**IMPACT OF THE LOAN ON LIVING STANDARD AND ADDITIONAL INCOME GENERATED**

DISTRICT		I.S.O.L.	A.I.G.	C.S.
PATHANAMTHITTA	X	5.00	10.00	2.00
	%	41.67	83.33	16.67
ERNAKULAM	X	12.00	12.00	11.00
	%	66.67	66.67	61.11
PALAKKAD	X	34.00	37.00	21.00
	%	89.47	97.37	55.26
GRAND TOTAL	X	51.00	59.00	34.00
	%	75.00	86.76	50.00

SOURCE : SURVEY DATA

INDEX : I.S.O.L. = IMPROVEMENT IN STANDARD OF LIVING , A.I.G. = ADDITIONAL INCOME GENERATED , C.S. = COST SAVING.

TABLE 6 : 33**INFORMATION ON THE GENERAL IMPACT OF NABARD REFINANCE.**

DISTRICT		TYPE OF CREDIT	
		ASSESSMENT	
		G.R.E.	G.M.E.
PATHANAMTHITTA	X	1.00	11.00
	%	8.33	91.67
ERNAKULAM	X	6.00	12.00
	%	33.33	66.67
PALAKKAD	X	7.00	31.00
	%	18.42	81.58
GRAND TOTAL	X	14.00	54.00
	%	20.59	79.41


SOURCE : SURVEY DATA

INDEX : G.R.E. = GRASS ROOT EXERCISE
G.M.E. = GENERAL MACRO EXERCISE

Thus the minor irrigation schemes undertaken by the sample farmers with the help of institutional finance from NABARD for new well, pumpset and for new well with pumpset together, facilitated to bring about some improvement in their farming conditions through positive changes in area under cultivation, cropping pattern, cropping intensity and farm practices which in turn brought about some improvement in their farm income, employment and asset position, which varied across districts, schemes and farmers.

CHAPTER 7



AN ANALYSIS OF LENDING EFFICIENCY,
FINANCIAL VIABILITY & FACTORS AFFECTING
 LOAN RECOVERY

The scheme happens to have a high return in EKM (1.54), followed by PKD (1.52). In PTA the pumpset scheme is not as viable as that in EKM and PKD as indicated by the low ratio, 1.19. The pooled ratio is 1.50.

It is interesting to observe that the low benefit-cost ratio in PTA is mainly as a result of the lack of concern for quality pumpsets. The high proportion of non-resident Indians among the minor irrigation loanees could have been one of the major reasons for this. That is because the non-resident Indians in Pathanamthitta who are engaged in agricultural operations left their landholdings under the guidance and supervision of their 'keepers'* or relatives who showed very little interest in the owner's agricultural progress.

(3) New Well with Pumpset

The parameters of the viability analysis under the scheme have been computed subject to the following assumptions:

- i. The life of the New Well with Pumpset together is taken as an average, which is 29 years.
- ii. The pumpset is replaced during the life of the well and the salvage value of one pumpset is taken as 10 per cent of the original cost.
- iii. Full development benefits from New Well with Pumpset are realised only in the third year. Benefits start from the second year and about 50 per cent of the full benefits will be realised in the second year.

Table 7.10 explains the financial viability of the New Well with Pumpset.

* 'Keepers' mean employees of the non-resident Indians

Table 7.10**Financial Viability Analysis- New Well with Pumpset (per hectare)**

Districts	Benefit-cost ratio at 15% discount factor.
PTA	1.49
EKM	1.37
PKD	1.51
Pooled	1.49

SOURCE : SURVEY DATA

The scheme has been financially viable in all the three districts but it has been more viable in Palakkad, (1.51) and Pathanamthitta,(1.49). In Ernakulam the ratio is 1.37. The pooled ratio for the three districts together is 1.49.

Further, all the three MI schemes studied in all the three districts are found to be financially viable in terms of the benefit-cost ratio. Table 7.11 gives compact information on the scheme-wise benefit-cost ratio at 15 per cent discount factor for all the districts together.

Table 7.11**Pooled Financial Viability Analysis (per hectare)**

Purpose of loan	Benefit-cost ratio at 15% discount factor.
NW	1.55
PS	1.50
NW with PS	1.49
Pooled	1.51

SOURCE: SURVEY DATA

INDEX : NW = NEW WELL, PS = PUMPSET NW with PS = NEW WELL WITH PUMPSET

The overall benefit-cost ratio at 15 per cent discount factor for all lendings under the scheme-head Minor Irrigation is 1.51. For the New Well scheme it is 1.55, for the Pumpset scheme it is 1.50 and for the New well with Pumpset scheme it is 1.49. Thus the above findings imply that the minor irrigation schemes undertaken have improved the socio-economic status of the selected farmers.

The benefits from the investments financed under the schemes accrued to the beneficiaries by way of increase in irrigated area, increase in productivity, increase in income and increase in farm employment. The benefit-cost ratio is one analytical methodology which is used to assess the increment via income. The items constituting minor irrigation works are many and their type and size depend not on the hydrogeology of the area but also on the size of the farm and the size of the minor irrigation investment.

SECTION III

FACTORS AFFECTING LOAN RECOVERY

The flow of funds is sine quo non for effective banking operations. Therefore it is essential for proper financial planning in lending and timely recovery from the borrowers. So recovery discipline, particularly in the present day context needs proper management for timely recovery of institutional loans from the borrowers.¹³ Running like a thread throughout the agricultural/rural credit system is the problem of high overdues. It appears that overdues mount owing to factors internal to the lending institutions

13. Patnaik, U.C. and Misra, N. Rabi, "Management of Change in Rural Credit Recovery Practices", Agricultural Banker, Vol.14, No.3, July - September, 1991, P.30.

as well as extraneous to them. The importance of recovery need not be overemphasised in agricultural lending because sanction and disbursement of loan, its utilisation and recovery are the three important segments of all credit programmes. The economic survival, efficiency and prosperity of the bank depend on all these factors.¹⁴

Primary data highlights the fact that the marginal and small farmers have better recovery performance than the large farmers. Corollary to this finding is the fact that farmers with higher incomes have weaker recovery performance than the lower income bracket. Secondary data prove that the higher the income from the project and higher the financial viability, the better the recovery. The Expenditure of the beneficiaries has an inverse relationship with recovery. These are the major aspects which explain recovery from the borrower's angle. The aspects from the lender's viewpoint also influence recovery. The study has proved that the 'Eligibility Criteria' for NABARD refinance has positive effect on loan recovery which further proves that schematic lending has positive influence on loan recovery, while general lending does not. The recovery data has proved that the State Land Development Banks have been more effective in the loan recovery drive than the Commercial Banks. Secondary data highlights the fact that the loan size disbursed has an effect on recovery. The smaller the size of the loan the better the recovery.

The relationship, nature of recovery and the major factors influencing it such as farm size (MF, SF, MEF and LF category), expenditure, income, type of lending and the type of client bank

14. Krishnan, C., "Regional Rural Banks and Recovery of Agricultural Credit : A study", Agricultural Banker, Vol.13, No.2, April - June, 1990, P.27.

have been examined in chapters five and six. To discuss it further, an attempt is made below to explain the relationship between loan recovery and its determinants numerically by means of a multiple regression model.

The Factors Influencing Recovery

In order to explain the effect of various factors on loan recovery, a multiple regression equation was fitted with loan recovery as the dependent variable and the following variables as independent variables:

- X1 Farm size of the beneficiary (MF, SF, MEF and LF).(in acres)
- X2 Annual Expenditure.(in Rs)
- X3 Annual Income.(in Rs)
- X4 Income generated from the project.(in Rs)
- X5 Financial viability of the scheme.(in Rs)
- X6 Credit gap (i.e. the gap in credit requirement).(in Rs)
- X7 General lending (lending from client banks own fund).(in Rs)
- X8 Schematic lending (NABARD refinance).(in Rs)
- X9 Loan size.(in Rs)
- X10 Commercial Bank lending (i.e. type of client bank).(in Rs)
- X11 Follow-up action (i.e.by NABARD officials).(in number of visits)

For analytical convenience, dummy value is attributed to variable X10. Because of the nature of the problems under study and due to the nature of variables, the chosen variables are interactive in the social frame and this interaction cannot be avoided or eliminated. The qualitative problem of the variable and its resultant multicollinearity is somewhat mitigated through the use of dummy variable technique for the variable, for estimating the parameters of the regression model. The regression coefficients and the correlation coefficient between loan recovery and the chosen variables are computed for the two schemes (RPDS and MI) in the

three districts (PTA, EKM and PKD) separately and pooled and the results are presented in the tables which follow (Table 7.12 to Table 7.17).

The multiple regression model explains the factors affecting loan recovery from the borrower's angle and lender's viewpoint. The variables on the borrower's angle are X1, X2, X3, X4 and X5, while those on the lender's side are X6, X7, X8, X9, X10 and X11. The following multiple regression model is used to find out the relationship between loan recovery and the possible factors affecting loan recovery.

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots\dots\dots b_{11}X_{11}$$

The first part of the section analyses loan recovery and the related variables for Rubber Plantation Development Scheme (RPDS), district-wise and pooled. Table 7.12 explains the regression coefficients of loan recovery and the chosen variables for the RPD scheme district-wise. Compared with the regression coefficients and 't' values, the variables which are significant in Pathanamthitta district are X1, X2, and X11 viz, farm size, expenditure, and follow-up action. Here all the three variables are positively related to loan recovery. It is a wide belief that the chances of loan recovery improve when there is better follow-up action by bank officials. This claim is reassured in the present analysis also. All the explanatory variables together in the model (Table 7.12) are capable of explaining only 12.04 per cent variations in recovery in Pathanamthitta (PTA) district. The 'F' ratio is 0.66783 but it is not significant. In Ernakulam (EKM) district the R^2 being 0.63203, the variables explain 63.20 per cent of variations in loan recovery in EKM. The 'F' ratio is 9.23222 and it is significant at 1 per cent level. The significant variables affecting recovery in EKM district are X1, X2 and X11. Here the independent variable X1 is negatively related to the theoretical aspect. This implies that the larger the

CHAPTER 7

AN ANALYSIS OF LENDING EFFICIENCY, FINANCIAL VIABILITY AND FACTORS AFFECTING LOAN RECOVERY

The previous chapters analysed the performance evaluation of the Rubber Plantation Development scheme and Minor Irrigation scheme. In this chapter the efficiency aspect is discussed. Both lending and financial efficiency are looked into. An analysis of the factors affecting loan recovery for the two schemes viz, Rubber Plantation Development and the Minor Irrigation are attempted. The results of these are presented in three sections. The first section presents the analysis on the lending efficiency of the bank. The analysis is based on various criteria such as the efficiency of loan recovery, the credit gap involved, the commitment-disbursement gap, the follow-up action by the bank, the difference in income, employment and asset position during the pre and post-loan periods and the effect of refinance on regional imbalances. The second section presents the financial viability analysis and its results with respect to the two schemes in the selected districts. The third section discusses the factors affecting loan recovery from both the lender's and borrower's angle using multiple regression model.

SECTION I

LENDING EFFICIENCY

In common parlance, the concept of efficiency of a bank is connected with such diverse aspects of its operations, as its financial soundness, its profitability or its customer service. The actual definition of the concept and the selection of appropriate indicators are beset with difficulties. Admittedly, operational efficiency in a service industry like banking has wide connotations.

These are considerably enlarged where banks are required to assume responsibilities in serving social as well as economic objectives. There can, thus, be no single appropriate index of the operational efficiency of the National Bank.¹

A study of the National Bank will be complete only when one analyses its efficiency in disbursing the loan with minimum inconvenience and maximum results for the borrower. It is possible to study lending efficiency using certain selected criteria. The selected criteria used here are (1) the efficiency of loan recovery, (2) the credit gap, (3) the commitment-disbursement gap, (4) an inter temporal analysis of income, employment and asset position and (5) the regional imbalances in Rural Schematic Refinance. Tables giving a macro picture of the variables involved also highlight a comparative analysis between the two schemes and also in some cases among the three districts.

First efficiency in loan recovery is studied. Table 7.1.1 gives the repayment performance of the beneficiaries based on category of recovery for the two schemes and for the schemes taken together. There are 245 beneficiaries in rubber plantation and minor irrigation schemes put together. Out of these, 150 repaid their loans fully and 86 partly. Nine farmers did not repay any part of the loans. The trend is much the same where the schemes are taken separately. Based on this it can be safely concluded that NABARD's performance is satisfactory, with reference to loan recovery. With reference to the loan repayment aspect it is assumed that efficiency is high when the loan is repaid from the income generated from the project itself. About 76 per cent of recovery is effected from

1. Angadi, V.B., "Measurement of Efficiency in Banking Industry", Reserve Bank of India Occasional papers, Vol.4, No.1, 1983,P.110.

TABLE : 7.1.1.

REPAYMENT PERFORMANCE BASED ON CATEGORY OF RECOVERY

TYPE OF SCHEME	FULLY REPAYED		PARTLY REPAYED		UNPAID		TOTAL	
	F	%	F	%	F	%	F	%
RUBBER PLANTATION	121.00	68.36	48.00	27.12	8.00	4.52	177.00	100.00
MINOR IRRIGATION	29.00	42.65	38.00	55.88	1.00	1.47	68.00	100.00
R.P.D.S AND M.I.	150.00	61.22	86.00	35.10	9.00	3.67	245.00	100.00

SOURCE : SURVEY DATA

INDEX : F = FREQUENCY

TABLE 7.1.2.

DIFFERENCE IN LOAN RECOVERY PATTERN BETWEEN BANK'S GENERAL AGRICULTURAL TERM LENDING AND TERM LENDING WITH REFERENCE TO NABARD REFINANCE

DISTRICT	BANK	BANK'S GENERAL AGRICULTURAL TERM LENDING			NABARD REFINANCE (SCHEMATIC)			AMOUNT IN RS.
		TOTAL DEMANDED	TOTAL COLLECTED	RECOVERY %	TOTAL DEMANDED	TOTAL COLLECTED	RECOVERY %	
PATHANAM THITTA	C.B.	1,801,156.00	914,627.00	50.78	517,436.00	455,448	88.02	
	S.L.D.B.	3,170,000.00	2,122,949.00	66.97	408,000.00	375,005	91.91	
	TOTAL	4,971,156.00	3,037,576.00	61.10	925,436.00	830,453	89.74	
ERNAKULAM	C.B.	3,552,671.00	2,121,560.00	59.72	610,207.00	391,436	64.15	
	S.L.D.B.	6,105,619.00	4,827,267.00	79.06	647,405.00	524,114	80.96	
	TOTAL	9,658,290.00	6,948,827.00	71.95	1,257,612.00	915,550	72.80	
PALAKKAD	C.B.	19,438,270.00	14,565,814.00	74.93	907,618.00	619,815	68.29	
	S.L.D.B.	21,273,101.00	13,253,142.00	62.30	863,026.00	675,963	78.32	
	TOTAL	40,711,371.00	27,818,956.00	68.33	1,770,644.00	1,295,778	73.18	
TOTAL	C.B.	24,792,097.00	17,602,001.00	71.00	2,035,261.00	1,466,699	72.06	
	S.L.D.B.	30,548,720.00	20,203,358.00	66.13	1,918,431.00	1,575,082	82.10	
	TOTAL	55,340,817.00	37,805,359.00	68.31	3,953,692.00	3,041,781	76.94	

SOURCE : SURVEY DATA

agricultural income alone. Table 7.1.2 explains the difference in the loan recovery pattern between the bank's general agricultural term lending and term lending with reference to NABARD refinance. The data prove that the recovery is higher (76.94 per cent) for NABARD refinanced loans than for the bank's general agricultural term lending (68.31 per cent). The agency-wise and district-wise analysis shows the same trend except for the commercial banks in Palakkad district. This clearly indicates that the 'Eligibility Criteria' for NABARD refinance has strong effect on loan recovery. This obviously brings efficiency in NABARD's refinance operations. Thus NABARD's performance has been efficient from the angle of loan recovery. The factors affecting loan recovery from the lender's and borrower's angle are analysed in detail in the third section of the chapter.

TABLE : 7.2.

GAP IN CREDIT REQUIREMENT PER UNIT OF INVESTMENT

AMOUNT IN RS.

SCHEME	T.C.I	T.C.A	OWN FUND	CREDIT GAP	GAP %
RUBBER PLANTATION	47,846.99	26,464.34	8,247.53	13,135.12	27.45
MINOR IRRIGATION	11,482.06	8,659.46	286.71	2,535.89	22.09
R.P.D.S AND M.I.	37,753.87	21,522.58	6,037.99	10,193.30	27.00

SOURCE : SURVEY DATA

The second index to measure the financial efficiency in lending is the credit gap experienced by the loanees. Table 7.2 explains the gap in credit requirement per unit of investment. The macro gap experienced by all the RPDS and MI loanees together amounted to 27 per cent. The gap is higher for the Rubber Plantation Development Scheme than for Minor Irrigation.

The third criteria to measure the financial efficiency is the commitment-disbursement gap per unit of investment. Table 7.3 explains it. For the two schemes together, the commitment-

disbursement gap amounts to 7.60 per cent. It is 7.85 per cent for rubber plantation scheme and 5.96 per cent for minor irrigation. Though the gap accounts for an insignificant proportion, NABARD can limit it by a closer supervision of the activities of the client banks.

TABLE : 7.3.

COMMITMENT-DISBURSEMENT GAP PER UNIT OF INVESTMENT

SCHEME	COMMITMENT	DISBURSEMENT	AMOUNT IN RS.	
			GAP	GAP %
RUBBER PLANTATION	26,157.97	24,105.49	2,052.48	7.85
MINOR IRRIGATION	10,020.99	9,423.54	597.45	5.96
R.P.D.S AND M.I.	21,679.13	20,030.50	1,648.63	7.60

SOURCE : SURVEY DATA

The fourth criteria for measuring financial efficiency is the follow-up action provided by NABARD. This is explained in Table 7.4 Out of the total 245 beneficiaries, only 25 were visited and that too only once. About 89.80 per cent (220) were never visited. The individual scheme follows the same trend. This clearly indicates that the follow-up action provided by NABARD is poor.

The economic aspects of lending efficiency include the differences in income, employment and asset position during the pre and post - loan periods and the effect of refinance on regional imbalances. Table 7.5.1 explains the per unit net incremental income generated via the two schemes. The net incremental income generated per unit of investment is Rs.28,933/- which amounts to 124.64 per cent. It is Rs.35,404/- (157.30 per cent) for rubber plantation and Rs.12,089/- (48.26 per cent) for minor irrigation. Table 7.5.2 explains the change in income levels of beneficiaries during the pre and post - loan periods by testing the difference between their means using 't' test. The 't' test shows that

TABLE : 7.4.**FOLLOW-UP ACTION BY NABARD**

SCHEME	PERIODICITY OF VISIT									
	ONCE		%	OCCASIONAL		NEVER		TOTAL		%
	F			F		F		F		
RUBBER PLANTATION	13	7.34			164	92.66	177	100.00		
MINOR IRRIGATION	12	17.65			56	82.35	68	100.00		
R.P.D.S AND M.I.	25	10.20	-	-	220	89.80	245	100.00		

SOURCE : SURVEY DATA

TABLE : 7.5.1.**PER UNIT NET INCREMENTAL INCOME GENERATED VIA SCHEMES**

TYPE OF SCHEME	PER UNIT PRE NET INCOME	PER UNIT POST NET INCOME	NET INCRE. INCOME (N.I.I.)	AMOUNT IN RS.
				N.I.I. %
RUBBER PLANTATION	22,507.28	57,911.18	35,403.90	157.30
MINOR IRRIGATION	25,051.93	37,141.29	12,089.36	48.26
R.P.D.S AND M.I.	23,213.55	52,146.48	28,932.93	124.64

SOURCE : SURVEY DATA

TABLE : 7.5.2.**CHANGE IN INCOME LEVEL OF THE BENEFICIARIES :
TESTING THE DIFFERENCE BETWEEN MEANS VIA R.P.D.S. AND M.I.**

TYPE OF SCHEME	MEAN VALUE(BEFORE)	MEAN VALUE (AFTER_	AMOUNT IN Rs.
			"t" VALUE
RUBBER PLANTATION	22,507.28	57,911.18	5.69*
MINOR IRRIGATION	25,051.93	37,141.29	7.98*
R.P.D.S AND M.I.	23,213.55	52,146.48	6.34*

SOURCE : SURVEY DATA

* SIGNIFICANT AT 1% LEVEL

TABLE : 7.5.3.**DIFFERENCE IN INCOME LEVEL OF THE BENEFICIARIES AND NON-BENEFICIARIES
TESTING THE DIFFERENCE BETWEEN MEANS VIA R.P.D.S. AND M.I.**

TYPE OF SCHEME	MEAN VALUE (BENEFICIARY)	MEAN VALUE (NON-BENEFICIARY)	AMOUNT IN Rs.
			"t" VALUE
RUBBER PLANTATION	57,911.18	29,871.40	2.98*
MINOR IRRIGATION	37,141.29	27,444.36	0.92**
R.P.D.S AND M.I.	52,146.48	29,197.78	1.44**

SOURCE : SURVEY DATA

* SIGNIFICANT AT 1% LEVEL

** NOT-SIGNIFICANT

for RPDS and MI together there is significant difference (at 1 per cent level) in income levels between the two points of time. Table 7.5.3 explains the variation in income levels of the beneficiaries and non-beneficiaries by testing the difference between their means using 't' test. It provides a cross-sectional analysis. The non-beneficiaries serve as a control group and so higher the positive variations between the incomes of the beneficiaries and control group better the impact. But the data in Table 7.5.3 show that there is no significant difference between the income levels. But there is significant difference in income levels for investment in rubber plantation. Table 7.5.4 deals with the per unit incremental employment generated in mandays via RPDS and MI. The 'own labour' component of incremental employment generated in mandays is 21.31 while the 'hired labour' component is 275.87 mandays. The table also gives the increment for rubber plantation and minor irrigation separately.

Table 7.5.5 shows that the incremental asset per unit of investment via Rubber Plantation Development Scheme and Minor Irrigation together amounted to Rs.9,300/- of which the incremental livestock asset per unit is Rs.2,365/-, while the component of incremental physical asset is Rs.6,935/-.

Thus there has been significant difference in the income, employment and asset position of most of the beneficiaries which speaks positively of the end - use of credit and thereby for NABARD's lending efficiency.

One of the important goals set before the banking system is to provide more even distribution of bank credit. Table 7.6 explains the criteria with reference to regional imbalances. The table strikes a relationship between the development of the district and the quantum flow of refinance to it. Palakkad which is assessed as the

TABLE : 7.5.4.**PER UNIT INCREMENTAL EMPLOYMENT GENERATED IN MANDAYS
VIA R.P.D.S. AND M.I.**

TYPE OF SCHEME	OWN LABOUR	HIRED LABOUR
RUBBER PLANTATION	17.03	359.24
MINOR IRRIGATION	32.44	58.84
R.P.D.S AND M.I.	21.31	275.87

SOURCE : SURVEY DATA

TABLE : 7.5.5.**INCREMENTAL ASSET GENERATED PER UNIT
VIA R.P.D.S. AND M.I.**

TYPE OF SCHEME	LIVESTOCK ASSET	PHYSICAL ASSET	AMOUNT IN
			RS.
TOTAL			
RUBBER PLANTATION	2,556.00	6,835.00	9,391.00
MINOR IRRIGATION	1,867.00	7,194.00	9,061.00
R.P.D.S AND M.I.	2,365.00	6,935.00	9,300.00

SOURCE : SURVEY DATA

most agriculturally developed district has a quantum of refinance amounting to Rs.21,922/- while PTA with a second development rank gets the highest amount of refinance, Rs.23,679/-. Ernakulam which is ranked the least developed had the lowest flow of refinance (Rs.12,510/-). Thus table 7.6 shows that the lower the development the lower the refinance disbursed. But no pattern of relationship can be struck at the higher levels of development.

Table 7.6

**The Quantum Flow of Refinance to the District
in relation to its Development**

Amount in Rs.

District	*Development Rank	Quantum Flow of Refinance
PTA	II	23,679.23
EKM	III	12,509.47
PKD	I	21,922.23

Note:

* Using primary and secondary data we measure the development of the district. From the primary data available variables like income, employment and assets are used to arrive at the development of the district. The secondary sources like (1) Growth Rate of District Income, (2) District-wise Percapita Income at Current and Constant Prices, (3) Sectoral Distribution of Net Domestic Product of Districts at Factor Cost and (4) District-wise Distribution of State Income at Constant and Current Prices were used to compute development. By combining these two sources, the development of the district is arrived at and ranks are imputed based on this value.

A notable feature of the economic scene in India is the predominance of weaker sections. Obviously, the development of weaker sections has become a precursor for overall progress and prosperity. Right from the 'Community Development' down to 'Integrated Rural Development', all the developmental programmes consider finance as one of the strategic inputs for the successful implementation of agricultural and rural development schemes.

A close observation of the primary data on agricultural credit reveals that NABARD has registered a commendable progress in lending. One can conclude that the credit delivers results only when it creates productive assets and generates enough income to raise the economic standard. Two things are therefore important for financial institutions, one is creation of capital assets and the other, enough income. Failure of any will lead to disappointment and harassment of the poor and losses to connected financial institutions. The earlier concept that only agriculture needs supervision is now being extended to the entire rural credit because of several inadequacies in the rural economy. So the criteria for lending efficiency should teach the fact that the end utilisation of credit is as important as making available quality asset. Strengthening the concept of credit camps and introducing recovery camps, along with popular extension work, without political interference is needed.

SECTION II

FINANCIAL VIABILITY ANALYSIS

This section studies the financial Viability of the two schemes viz Rubber Plantation Development and Minor Irrigation. It is possible to use the data on cost and returns of the schemes to analyse their investment worth. The viability of loans is determined

on the basis of private costs and returns accruing to the beneficiaries and the ability to repay loans. Investment, by definition, yields its fruits only with passage of time. Project is an opportunity for investment of resources in terms of men, material, equipment and money. Funds are invested in the project to create lasting assets which are capable of producing benefits over a period of time. Investment of funds in a project will initially be for acquiring fixed/producing/lasting/capital assets and thereafter it becomes an expenditure of recurring nature e.g. operations and maintenance expenses, production expenses etc to keep the lasting assets in economic use. Further, an investment is made with the hope of obtaining some benefits; obviously, for a sufficiently long period. Normally an investor operates at a particular level of expenditure giving him some benefits. The basic aim of an investor is to exchange immediate expenditure against future money income or benefits spread over a long period of time. Investment in project, generates streams of benefits and results in streams of costs during its life-time. The streams of benefits in a project must, therefore generate adequate cash flows through its operations so that the net cash flows together with the salvage/scrap/residual value of the fixed assets, if any, at the end of the project period are sufficient to pay back the investments, with a reasonable return, during economic life of the project.²

Therefore, an investor in a project is concerned primarily with the financial viability, to be more precise, profitability of the project. But apart from return to all the resources contributed by the investor, the terms of credit specially interest rates and repayment terms will also influence the choice of the project, in case he is to depend upon any credit institution i.e. bank, for loan. Hence investment in a project will have another dimension from a

2. NABARD, Induction Course Reading Material, Lucknow, NABARD Staff College, 1987, P.100.

banker's point of view. Apart from the bank's concern about the financial viability of the projects, it will also examine the project from the point of view of sound financial management or bankability aspects. The investment will be considered as bankable when the loanee is able to repay the loan within the maximum period prescribed by the bank (not exceeding the economic life of asset) out of the incremental income generated by the investment. Thus an investor in a project as well as the banker are concerned with the assessment of project's financial gains and, therefore, take up financial appraisal of the project. The financial appraisal helps them to assess the incentives available to the investor to participate in the project. It also helps in evaluation of the impact of project on him. Further, besides providing a sound financing plan for the project, it helps in determining the overall financial requirements of the project and also its beneficiaries' financial management competence etc.³

The basic concept underlying the financial analysis/appraisal of a project is to identify costs and benefits of the proposed project, give values to it and then compare the stream of future costs (cost out-flows) with stream of future benefits (cash in-flows) with a view to finding out which alternative (amongst different projects) gives better results. The simple method to compare the stream of benefits and costs is to add-up benefits and costs separately over the life of the project and use the aggregate as the measure of the project's overall contribution or worth. In this way, we assume, explicitly or implicitly that the benefits and costs are of equal value, wherever they occur. However, the following two are the usual methods of financial appraisal or in other words measuring the worth of a project. The first one is the undiscounted measures of

3. Ibid., PP. 100 - 101.

project's worth or undiscounted cashflow technique of project's worth and second is the discounted measures of project's worth or discounted cashflow technique of project's worth.⁴

In discounted measures of project worth, we reduce the future stream of benefits and costs (i.e. benefits accruing and costs incurred in each year) to their present worth, and compare the aggregate benefits and costs by finding out the benefit-cost ratio. In discounted measures of project worth a projection of various financial flows is basic to financial analysis. For most agricultural projects the proper point from which to begin both the economic and the financial analysis is with a "model" or "pattern" farm plan for an individual farmer. Farm plans usually represent a careful judgement of agriculturalists, about the "optimum" or most profitable farming activities and cropping pattern for a farm, given reasonable assumptions about such things as the risk farmers are willing to assume and their preferences for subsistence food crop production.

Using information on the annual proceeds of private costs and benefits we compute the benefit-cost ratio for the two schemes, Rubber Plantation Development Scheme (RPDS) and Minor Irrigation Scheme (MI).

For selection of the project, the benefit-cost ratio should be more than one when discounted at opportunity cost of capital or cut-off rate. This is because the absolute nature of the benefit-cost ratio will vary depending upon interest rate chosen. The higher the interest rate, the lower the resultant benefit - cost ratio.⁵

4. Ibid, P.101

5. Ibid, P.111

By calculating the benefit-cost ratio of the scheme at 15 per cent discount rate, the first step to determine which among the two schemes are more viable and which to accept or reject are highlighted below.

The first part (A) of section II deals with Rubber Plantation Development Scheme. The assumptions used in measuring costs and benefits and in determining viability are explained below.

Section II (A)

Estimation of Yield from Rubber Plantation

In estimating the per unit production as a result of the project, there are certain factors which need to be considered. The basic one, of course, is the present level of production in the area with the traditional methods as adopted by the growers. Very precise information/data may not be available with the technical departments. Also, most growers are reluctant to give a correct idea of the production in their plantations. Under these circumstances it is always better to interview a large number of growers and make projections by using one's own judgement. While making yield projections one should take into view the improved package of practice to be adopted. The vagaries of nature should be taken into account to work out the yield. A little conservative estimate is to be preferred rather than a liberal one. For cash returns also the farm-gate price should be taken into account rather than the consumer price.⁶

6. Kotaiah, P(ed), Technical Aspects of Agricultural Projects Vol.II, Bombay, National Bank for Agriculture and Rural Development, 1990, P.164.

While working out the returns, we should indicate the year-wise anticipated production and its probable value to be recovered. While working out the returns it is preferable to take the production slightly on a lower side and the value also accordingly to cover the risk of climatic vagaries and fluctuations in the market prices.⁷

Hevea Brasiliensis is the most important commercial source of natural rubber - a product of vital importance recovered from its latex. Natural rubber, however, has been found in the latex of over 895 species of plants belonging to 311 genera of 79 families.⁸ The quality of the plant is measured in terms of the breed, age and quantum of latex yield. Assuming that there are 350 trees per hectare and 148 tapping days per annum we can arrive at estimates of the yield per tree per annum

(i) The budded trees of modern clones (RRII 105, RRIM 600, GTI), the budded trees of older clones and clonal seedlings start yielding from the eighth year onwards.

(ii) The economic life of rubber plantation is 25 years which commences from the eighth year when tapping begins. Here only 25 years of life commencing from the first year of planting is taken into account. The length of time for which cash inflows and outflows need to be projected on a year-to-year basis for the purpose of analysis would broadly conform to the economic life of the asset. In case where benefits continued to accrue to the farmer for a large number of years in future (eg. tree crop project) it will suffice if the cash flow projection is restricted to 15 to 20 years.⁹

7. Ibid., P.171

8. Nair, Narayanan P.N. et al., (ed.), The Rubber Grower's Companion, Kottayam, The Rubber Board, Kottayam, 1995, P.1.

9. State Bank of India, Agri-Projects (Guidelines for Preparation of Agricultural/Allied Schemes), Madras, Development Manager (AGRI), 1989, P.20.

(iii) The yield from the first to the fifth year of tapping shows increasing variations, but from the sixth year of tapping up to the 20th year the yield is ranging from 1800-2500 Kgs. per hectare per annum.

(iv) Gradual decline in yield normally occurs from the 21st year of tapping.

(v) The yield is assumed to include 80 per cent of latex and 20 percent scrap.

(vi) The yield estimates are calculated separately for rubber trees of modern clones and that of clonal seedlings.

(vii) The yield derived from slaughter tapping in the last years of the plant are also taken into account.

(viii) To determine the price of rubber per Kg. the average of the prices from 1982 to 1992 is taken and it amounted to Rs.30/- per Kg.

The total benefits from RPDS depend upon its yield. The yield estimates for each district are calculated on a per hectare basis. When calculating the yield and revenue therefrom, the yield for 18 years commencing from the first year of tapping is taken into account for each beneficiary. This estimation of the yield is derived from the beneficiaries directly for the first six years of tapping and for the remaining years, projections are made with the help of the primary data available. These estimates are cross-checked with the Rubber Board's data on yield. In majority of the cases the primary and secondary data are compatible. The total yield for 18 years is calculated based on these yearly estimates and an average yield and revenue is computed by dividing the total value by 18 years. Thus the average yield per year is calculated. The similar

process is repeated for the non-beneficiary population which constitute the control group.

Cost Estimates

The costs associated with rubber plantation are mainly of two types the developmental cost or the cost incurred during the immaturity period of rubber plantation and the recurring cost component which is the cost incurred during the maturity period. The development cost is the cost incurred from the first year of planting up to the seventh year before tapping commences. The items of cost included in this component are costs like clearing the land, terracing, lining and pitting, filling and planting, cost of planting materials, pruning, weeding and mulching, manuring, plant protection, establishment of cover crops, drainage and other miscellaneous work, boundary protection, watchman charges, cost of tools and implements and repairs and insurance charges. These items of cost are further divided as labour cost, material cost and others.

The cost incurred on rubber plantation during the maturity period that is from the first year of tapping to the 18th year (eighth year of planting up to the 25th year) is considered as the recurring cost component. To calculate the average recurring cost per year the total recurring cost from eighth year to 25th year is taken into account using the available primary data collected from the beneficiaries for six years of tapping along with the projections for the remaining years, based on Rubber Board estimates. Like the yield estimates, the primary data on the recurring cost estimates are cross-checked with the Rubber Board's secondary data and conclusions arrived at. To get the average recurring cost per year the total recurring cost is divided by 18. The recurring cost component is further divided into material cost, labour cost and

others. These costs go under the items (i) manuring (fertiliser application), (ii) weeding and mulching, (iii) plant protection (mainly spraying and rainguarding), (iv) tapping cost which also includes cost of tools, implements and repairs. Thus the total cost of rubber planting includes a component of fixed cost which is the development cost incurred during the first seven years of planting and which is spread out for 25 years, while from the eighth year onwards a recurring cost component also follows for 18 years.

The financial viability for Rubber Plantation Development scheme using benefit-cost ratio for the three districts calculated on a per hectare basis is highlighted in table 7.7.

Table 7.7

Financial Viability Analysis - Rubber Plantation Development Scheme (per hectare)

Districts	Benefit-cost ratio at 15% discount factor
PTA	1.56
EKM	1.66
PKD	1.60
Pooled	1.59

SOURCE: SURVEY DATA

The estimates prove that the benefit-cost ratio is the highest in Ernakulam district (1.66), while it is only 1.56 in Pathanamthitta. In Palakkad it is 1.60. Thus the overall average (pooled) benefit-cost ratio for RPDS amounts to 1.59. The data support the finding that the Rubber Plantation Development Scheme is viable in all the districts and most viable in Ernakulam district. The details of the worked out results are given in Appendix II (A) (1 to 3).

The returns calculated from RPDS should be done in the context of the object of the scheme. The scheme is intended to increase production of natural rubber in India by accelerating new planting and replanting of rubber on modern scientific lines.¹⁰

The progress of plantation crops so far has been achieved solely due to the efforts of individual entrepreneurs, with limited financial and other resources. Though groups of farmers in recent times have been benefited in the development task through credit assistance provided from the governmental budgets, the results achieved cannot be satisfactory in relation to the efforts put in, due to budgetary restrictions. The institutional finance which does not seem to have the constraint of the limited budget provisions of the government departments has the added advantage of building financial discipline especially amongst the borrowers which seems to be a necessity in the transition period of development. A project approach to such activities will help to bring about a comprehensive outlook which aims at removing the bottlenecks and providing necessary inputs, service and, in general, the infrastructure base on scientific lines.¹¹

Section II (B)

This part deals with the financial viability of Minor Irrigation Schemes. In this part, the costs and benefits of each minor irrigation scheme and the net income accrued to the sample farmers are analysed. Here the benefit-cost analysis for each scheme has been attempted in order to assess the viability of the investment made in that scheme.

10. Rubber Board, Rubber Plantation Development Scheme PhaseIV, 1993 to 1997, The Rubber Board, 1995, P.2.

11. Kotaiah, P., (ed), Op.cit., P.164.

The viability of any scheme will depend on the benefits it will yield in relation to the investment. The investment costs that will have to be incurred to sink the well and to energise it, will depend on the size and the hydrogeology of the place. The yield relates to the quantity of water that can be extracted from the well during the cropping season and is usually expressed in terms of hectare metre or acre feet. On an average, it is about 1 to 1.5 ha. m or 10 to 12 acre feet in hard rock areas for a dugwell. The extent of area that can be irrigated depends on the type of crops grown and their water requirements during different seasons.¹²

The benefit-cost ratio is computed for all the schemes separately. The method of calculation of both benefits and costs has been elaborated. The details of the worked out results have been given in Appendix II (B) (4 to 12). The scheme-wise financial viability analysis is given below.

(1) New Well Scheme

The financial viability of investments undertaken under the New Well Scheme is assessed on the basis of benefit-cost ratio. The benefit-cost ratio based on cash flow for 30 years, in current prices have been computed subject to the following assumptions.

- i. The life of the well is 40 years.
- ii. There will be no shrinkage in the command area of the well.
- iii. There will be no change in the crop pattern over the years.
- iv. The development benefit flow has the following characteristics.

12. NABARD, Manual For Appraisal of Agricultural and Rural Development Projects, Bombay, NABARD Head Office, 1986, PP.126-127

- a. No benefits accrue in the first year of well construction since it continues for over six months.*
- b. Only 50 per cent of the additional benefit is realised in the second year.
- c. Total benefit starts flowing after the third year onwards.
- v. The desilting of well and other repair works for well are carried out every tenth year.**
- vi. The viability analysis assumes water table to be constant over the life of the well.

Table 7.8 explains the financial viability of the New Well scheme using benefit-cost ratio at 15 per cent discount factor.

Table 7.8

Financial Viability Analysis - New Well (per hectare)

Districts	Benefit-cost ratio at 15% discount factor.
PTA	1.54
EKM	1.42
PKD	1.57
Pooled	1.55

SOURCE : SURVEY DATA

* In some cases the work will be over in less than six months but they have to wait for electricity connection; sometimes it takes more than a year to get the connection

** Based on the observations collected from the sample farmers.

The ratio is 1.57 in Palakkad district which is the highest among the districts and is followed by Pathanamthitta (1.54), and in Ernakulam it is 1.42. The pooled ratio (i.e. for all the districts together) for the New Well Scheme is 1.55.

The entire ground water development in hard rock areas of the state is by New Wells. Hence the yield of New Wells in the state and an assessment of its financial viability aspects become an important concern for social scientists and policy makers.

(2) Pumpset Scheme

The parameters of the viability analysis for the pumpset scheme is calculated on the basis of the following assumptions:

- i. The life of the pumpset is 15 years.
- ii. The pumpset is replaced during the life of the well and the salvage value of one pumpset is taken as 10 per cent of the original cost.
- iii. The additional benefits are realised from the second year onwards.
- iv. The repair works for the pumpset are carried out every fifth year.**

The details of the financial viability aspect of the pumpset scheme in the districts of Pathanamthitta, Ernakulam and Palakkad are highlighted in table 7.9.

Table 7.9
Financial Viability Analysis - Pumpset (per hectare)

Districts	Benefit-cost ratio at 15% discount factor.
PTA	1.19
EKM	1.54
PKD	1.52
Pooled	1.50

SOURCE : SURVEY DATA

** Based on the observation collected from the sample farmers.

TABLE 7.12.

REGRESSION COEFFICIENT OF LOAN RECOVERY AND CHOSEN VARIABLES FOR R.P.D.S. DISTRICT-WISE

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_9X_9 + b_{11}X_{11}$$

VARIABLES	PTA		N = 48		EKM		N = 52		PKD		N = 77	
	REGRESSION COEFFICIENT	S.E.	't' VALUE	REGRESSION COEFFICIENT	S.E.	't' VALUE	REGRESSION COEFFICIENT	S.E.	't' VALUE	REGRESSION COEFFICIENT	S.E.	't' VALUE
X1	1.210573	0.894811	1.353	-1.254185	1.326006	-0.946	-0.554156	0.00016692	-0.509			
X2	0.001943	0.002021	0.961	0.001568	0.001273	1.232	0.000825422	0.002104	0.392			
X3	-0.0000651164	0.000132437	-0.492	0.000139258	0.0000829992	1.678	-0.0000249783	0.000106848	-0.234			
X4	-0.0002311820	0.000217096	-1.065	0.00009322269	0.000170426	0.547	-0.0000763901	0.000166192	-0.46			
X6	0.0002756561	0.000336997	0.818	0.00010387	0.000213583	0.486	0.000224778	0.000277045	0.811			
X9	0.0000802959	0.000385768	0.208	-0.000283318	0.000224037	-1.265	0.000494499	0.000243632	2.03			
X11	3.137602	13.960061	0.225	1.549365	2.97347	0.521	20.398226	14.080699	1.449			
CONSTANT	76.924491	61.435932	1.252	73.664118	5.291335	13.922	10.930607	75.669199	0.144			
R ²	0.12049			0.63203			0.13868					
F RATIO	0.66783			9.23222			1.34842					

SOURCE : SURVEY DATA

farm size (X1) of the beneficiary the lower the recovery. For the district of Palakkad the explanatory variables are capable of explaining only 13.86 per cent of variations in recovery. The variables which hold influence on recovery in PKD are X11, X1 and X2. The 'F' ratio for the district is 1.34842 and it is significant at 10 per cent level. The district-wise comparison between the explanatory variables for RPDS shows that among the 11 variables X1, X2 and X11 (viz, farm size, expenditure and follow-up action) have influence on loan recovery in all the three districts. It should be noted in particular that the variables X5,X7,X8, andX10 are dropped in the district-wise model as there is only a single value as data under each variable.

TABLE 7.13.

REGRESSION COEFFICIENT OF THE POOLED R.P.D.S. MODEL

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + \dots + b_{11}x_{11}$$

(POOLED) N = 177

VARIABLES	REGRESSION COEFFICIENT	S.E.	't' VALUE
X1	0.102102	0.31961	0.319
X2	0.001114	0.000714162	1.561
X3	-0.0000229624	0.0000382209	-0.601
X4	0.0000875991	0.0000924955	-0.947
X5	27.073083	21.298305	1.271
X6	0.0002158638	0.00014202	1.52
X7	0.442362	0.374367	1.182
X8	0.000739256	0.001525	0.485
X9	0.0002482859	0.000157687	1.575
X10	-18.455432	5.795045	-3.185
X11	1.314406	4.857244	0.271
CONSTANT	0.486627	38.571938	0.013
R ²	0.123		
F RATIO	2.09109		

SOURCE : SURVEY DATA

Table 7.13 gives the results of the pooled regression model for the Rubber Plantation Development scheme i.e. for all the three districts of PTA, EKM and PKD together. All the variables together in the model explain 12.30 per cent variations in the dependent variable. This strikes a weak relationship between the dependent variable and the explanatory variables. This is probably because the rubber farmers on the whole are well to do and have good recovery for their loans. The proportion of overdue which itself is insignificant for RPD scheme cannot be accounted for by any explanatory variable. The very fact that income does not have much influence on loan recovery for RPDS loanees itself shows that the well to do class of farmers are least influenced by the income generating aspects, but are influenced more by meagre aspects like type of bank, nature of lending and follow-up action by bank officials. The significant independent variables for the pooled analysis are X10, X5, X7, X2 and X1. The variable X10 i.e. CB lending has a negative influence on recovery which indirectly implies that SLDB lending is better from the point of view of recovery. The fact is that the rubber planters are rich farmers who have little justification for not repaying loans for reasons within their economic control like income, expenditure etc. Field level feedback substantiates the fact that the few rubber loanees who did not repay their loans did so because of sheer lethargy and carelessness on their part. Therefore recovery can be effected if the banker is alert. Variable X3 (income) has a negative correlation on recovery for PTA, PKD and also for the pooled analysis. This shows that the small farmers with lower income took more care to recover debt than the richer group of rubber planters. The variable X5 (financial viability of the RPD scheme) has significant influence on loan recovery in the pooled model. In the case of the district-wise analysis this variable has been dropped since individual values for financial viability of the RPD scheme are not computed. The pooled analysis is possible with each district-wise average

financial viability ratio. The 'F' ratio for the pooled RPDS model is 2.09109 and it is significant at 5 per cent level.

The second part of section III deals with the factors affecting loan recovery for the Minor Irrigation (MI) scheme. Table 7.14 gives information on the regression coefficients on loan recovery and the chosen variables for the districts of Pathanamthitta, Ernakulam and Palakkad, while table 7.15 gives the pooled analysis for the minor irrigation model, i.e. for all the three districts together. The Minor Irrigation beneficiaries are not as well off as the RPDS loanees, as is clear from the data provided in chapter five and six. Hence the factors affecting recovery are more significant for the Minor Irrigation scheme. Here also the factors are analysed from the borrower's angle and lender's angle. Table 7.14 gives the results of the regression model for the three districts of PTA, EKM and PKD separately. Compared with standard error and 't' value the variables which are significant in Pathanamthitta district are X5 X2 and X1 viz. financial viability of the Minor Irrigation scheme, expenditure of the beneficiaries and farm size. It is interesting to note that variables X2, X3 and X9 are inversely related to loan recovery which means that the higher the expenditure and income of the beneficiary the poorer the recovery. Variable X9 explains the relationship that if the size of loan disbursed is smaller better the recovery when compared to large sized loans. The R^2 for PTA district is .97905 which explains 97.90 per cent of the variations in the dependent variable. The 'F' value is 10.3864 and it is significant at 10 per cent level. In EKM district the significant variables are X1, X2 and X5 viz., farm size, expenditure and financial viability of the MI scheme. The explanatory variables account for 98.36 per cent ($R^2 = .98361$) variations in loan recovery. The relationship is thus very strong in the district. The 'F' ratio is 53.3496 and it is significant at 1 per cent level. In EKM district, expenditure and income are negatively correlated to loan recovery,

TABLE 7.14.

**REGRESSION COEFFICIENT OF LOAN RECOVERY AND CHOSEN VARIABLES
FOR M.I. SCHEME - DISTRICT-WISE**

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11}$$

VARIABLES	PTA		EKM		N = 18		PKD		N = 38	
	REGRESSION COEFFICIENT	S.E.	't' VALUE	REGRESSION COEFFICIENT	S.E.	't' VALUE	REGRESSION COEFFICIENT	S.E.	't' VALUE	
X1	0.815530	3.957076	1.206	2.272025	2.433115	0.934	2.185758	3.854532	1.567	
X2	-0.013562	0.002292	-5.917	-0.001327	0.001309	-1.014	-0.001721	0.004859	-0.954	
X3	-0.000891834	0.000146912	-6.071	-0.00021751	2.82063E-05	-0.771	-0.0000708078	0.000121626	-0.582	
X4	-0.001448	0.000689807	-2.099	5.94727E-05	0.000106437	0.559	0.000582593	0.000898809	0.648	
X5	28.869233	13.061652	2.21	3.047074	8.814756	0.346	12.006741	49.64047	0.243	
X6	0.004754	0.000975936	4.871	0.000659955	0.001284	0.514	0.000227126	0.001982	0.115	
X9	-0.000960658	0.000730151	-1.316	0.000280684	0.000328375	0.855	0.000986381	0.002088	0.472	
X11	5.28474	4.163368	1.269	0.152778	3.244794	0.047	0.617382	12.799435	0.048	
CONSTANT	48.924695	18.401025	2.659	-133.24233	21.938915	-6.073	68.562211	128.021467	0.536	
R2	0.97905			0.98361			0.11756			
F RATIO	10.38638			53.34963			0.41446			

SOURCE : SURVEY DATA

which means that higher the income and expenditure the lower the recovery. For the district of PKD the relationship between recovery and the independent variables account for only 11.76 per cent ($R^2 = .11756$). The 'F' value, which is .41446, is not significant. Out of the explanatory variables, X1, X2, X5 and X4 are important in the district. Similar to the districts of PTA and EKM in PKD also the income and expenditure of the beneficiary have a negative correlation with recovery. A cross-wise comparison between the districts shows that variables X1 (farm size), X2 (expenditure) and X5 (financial viability of the MI scheme) are significant in the three districts. Thus the factors from the borrower's angle have a greater influence on loan recovery for the Minor Irrigation scheme in the three districts and particularly in the district of PKD, while in the case of RPD scheme it is the other way around.

TABLE 7.15.

REGRESSION COEFFICIENT OF THE POOLED M.I. MODEL

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + \dots + b_{11}x_{11}$$

(POOLED) N = 68

VARIABLES	REGRESSION COEFFICIENT	S.E.	't' VALUE
X1	2.745742	2.057442	1.335
X2	-0.001141	0.001879	-1.607
X3	-0.000525317	0.0000686609	-0.765
X4	0.0002257518	0.000362456	0.623
X5	3.737957	19.813991	0.189
X6	-0.0006820300	0.00065334	-1.044
X7	-0.85086	0.507796	-1.676
X8	3.167301	0.717295	4.416
X9	0.0001247493	0.000789565	0.158
X10	24.282584	10.985244	2.21
X11	2.514843	6.969321	0.361
CONSTANT	-260.319275	85.265645	-3.053
R^2	0.44328		
F RATIO	4.05362		

SOURCE : SURVEY DATA

Table 7.15 gives the results of the multiple regression analysis for the pooled minor irrigation model. The variables which are significant in the case of pooled analysis are X10, X8, X1 and X2 viz., type of bank (CB lending), nature of lending (schematic lending), farm size and expenditure of the respondent. Among these, all the variables are positively related to loan recovery except X2 (expenditure). Since (X10) is positively related, lending by commercial banks have a positive effect on loan recovery, which implies that for minor irrigation scheme the commercial banks have been performing better than State Land Development Banks. The analysis on nature of lending (i.e. whether schematic or general lending) validates the earlier finding on the positive effect of the 'Eligibility Criteria' on loan recovery; as schematic lending is positively correlated with recovery and general lending has an inverse relationship. With reference to farm size a direct relationship with recovery is arrived at and for X2 (expenditure) an inverse relationship is struck. While for RPD scheme farm size is negatively correlated to recovery in EKM and PKD, for minor irrigation scheme it is positive in all the three districts. The pooled analysis shows that the independent variables account for 44.33 per cent ($R^2 = .44328$) variation in the dependent variable. The 'F' ratio is 4.05362 and it is significant at 1 per cent level. It is interesting to note that for the pooled MI analysis X3 and X6 are negatively correlated to loan recovery. This implies that the higher the income and higher the gap in credit requirement (credit gap) the lower the recovery.

The third part of the section deals with the multiple regression analysis for the two schemes together in a pooled manner. A cross-wise comparison between the districts is also effected in the model.

Table 7.16 explains the district-wise regression coefficients for the scheme-wise pooled model i.e. for RPDS and MI schemes together. The model shows that for the district of Pathanamthitta the significant variables affecting recovery are X1 and X2 viz., farm size and expenditure. Among these variables X2 is negatively related. The negative regression coefficients for the other variables viz., income and loan size imply that the larger the income and loan size the poorer the recovery. The independent variables in Pathanamthitta explain 15.89 per cent ($R^2 = .15887$) variation in loan recovery. The 'F' ratio is .92550 but it is not significant. The second part of table 7.16 explains the model for Ernakulam district. About 63 per cent ($R^2 = .62690$) of the variation in loan recovery are caused by the explanatory variables in the model. The 'F' ratio is 11.20164 and it is significant at 1 per cent level. The significant variables in Ernakulam district are the financial viability of the scheme (X5), farm size (X1) and expenditure (X2). In the district variables X2, X3 and X9 are negatively correlated. In PKD district the significant independent variables are X11 (follow-up action by NABARD), X5 (financial viability of the RPDS and MI schemes) and X2 (expenditure of the beneficiary). Among these X11 and X5 are positively related to recovery and X2 negatively related. The income of the beneficiary is seen to have a negative impact on recovery even in PKD as is the case in PTA and EKM. The R^2 in PKD district is 0.07913, which means that only 7.9 per cent variation in loan recovery is as a result of these factors. The 'F' ratio is .99300, but it is not significant. A cross-wise analysis between districts for the two schemes pooled together (RPDS and MI) show that farm size (X1), expenditure (X2) and financial viability of the schemes (X5) are significant from the borrower's angle, while X11 (follow-up action), is the important variable from the lender's side.

TABLE 7.16.

DISTRICT-WISE REGRESSION COEFFICIENT FOR THE SCHEME-WISE POOLED MODEL
R.P.D.S. & M.I. COMBINED

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_9X_9 + b_{11}X_{11}$$

VARIABLES	PTA		N = 60		EKM		N = 70		PKD		N = 115	
	REGRESSION COEFFICIENT	S.E.	't' VALUE	REGRESSION COEFFICIENT	S.E.	't' VALUE	REGRESSION COEFFICIENT	S.E.	't' VALUE	REGRESSION COEFFICIENT	S.E.	't' VALUE
X1	1.3347300000	0.794669	1.68	2.810501	1.352958	2.077	-0.247973	0.893808	-0.277	-0.247973	0.893808	-0.277
X2	-0.0019780000	0.001752	-1.129	-0.002417	0.001489	-1.623	-0.001705	0.001871	-0.912	-0.001705	0.001871	-0.912
X3	-0.0000735618	0.00011691	-0.629	-0.000149153	0.0000575819	-2.59	-0.0000137904	0.0000732738	-0.188	-0.0000137904	0.0000732738	-0.188
X4	0.000254248	0.000192306	1.322	0.000076936	0.00016525	0.466	0.000103875	0.000141333	0.735	0.000103875	0.000141333	0.735
X5	14.379418	42.011268	0.342	23.889519	20.028097	1.193	3.677728	35.261983	0.104	3.677728	35.261983	0.104
X6	0.0002495908	0.000300154	0.832	0.000220683	0.00027507	0.802	7.15807E-05	0.000217092	0.33	7.15807E-05	0.000217092	0.33
X9	-0.0000943674	0.000341728	-0.276	-0.0000396747	0.000273016	-0.145	0.000451572	0.000224859	2.008	0.000451572	0.000224859	2.008
X11	5.198281	11.075248	0.469	1.055957	3.388745	0.312	6.67123	8.450177	0.789	6.67123	8.450177	0.789
CONSTANT	100.555886	73.418775	1.37	-123.923319	36.443622	-3.4	65.349241	54.168765	1.206	65.349241	54.168765	1.206
R^2	0.15887			0.6269			0.07913			0.07913		
F RATIO	0.9255			11.20164			0.993			0.993		

SOURCE : SURVEY DATA

The regression coefficients of the pooled scheme-wise and district-wise regression model (n = 245) are explained in table 7.17. The significant variables in the pooled analysis are X10, X7, X1 and X2, of which X10, X7 and X2 are negatively related to recovery. One striking feature is that for all the pooled models specified, a negative relationship between income and recovery is observed. For the pooled analysis the loan size has a positive effect on recovery, even though the variable is not statistically significant. The independent variables in the model are capable of explaining only about 11 per cent of variation in output ($R^2 = .10976$). The 'F' ratio is 2.60032 and it is significant at 1 per cent level.

TABLE 7.17.

**REGRESSION COEFFICIENT OF THE POOLED MODEL -
DISTRICT-WISE , SCHEME-WISE (M.I. & R.P.D.S.)**

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + \dots + b_{11}x_{11}$$

(POOLED) N = 245

VARIABLES	REGRESSION COEFFICIENT	S.E.	't' VALUE
X1	0.215950	0.314691	0.686
X2	-0.001272	0.000652327	-1.95
X3	-0.000018849	0.0000324042	-0.582
X4	0.000120332	0.0000 865639	1.39
X5	0.471107	14.76356	0.032
X6	0.0001211071	0.000117899	1.027
X7	0.327792	0.301118	1.089
X8	-0.000325205	0.001291	-0.252
X9	0.0002700313	0.000149303	1.809
X10	-14.842379	4.565661	-3.251
X11	0.029784	3.910704	0.008
CONSTANT	46.365822	28.686013	1.616
R^2	0.10976		
F RATIO	2.60032		

SOURCE : SURVEY DATA

A summary of the estimated coefficients for the three major models show that variables X1, X2, X7, X8 and X10 have, in general, an influence on loan recovery. Out of these variables, X1

and X2 are categorised as from the borrowers' angle (beneficiary's point of view), while X7, X8 and X10 are viewed as from the lenders' (banker's) standpoint. Variable X7 and X8 broadly refer to the nature of lending, while X10 refers to the type of client bank disbursing NABARD's refinance. For analytical convenience, dummy value is attributed for variables X10. Thus the analysis from the lenders' angle reveals that the 'Eligibility Criteria' plays a major role in deciding loan recovery. This can be most vividly observed in the case of State Land Development Banks. The study also shows that in general the SLDBs have been more vigilant to recover debts than the commercial bank clients. The study conclusions of the regression model take for granted the income aspect of recovery as income is assumed to have very little significance in the recovery drive. This probably could be due to the fact that the NABARD loanees are more well to do than other loanees. The norms laid down for NABARD refinancing for RPD and MI schemes necessitates a minimum hectareage for the loanees. This probably has excluded the poorest of the poor segments for whom income is a prime concern. But the negative income regression coefficients for most of the models show that out of the beneficiaries selected the small and medium farmers are more prompt in repaying loans. This supports the data on recovery in chapters five and six.

Hence policies relating to better loan recovery should be formulated after a careful assessment of the factors both from the borrower's and lender's viewpoint together. From the lender's viewpoint one can argue that while the guidelines are necessary, they must be well thought-out, tested and they should not be rigid in a large and diverse country like India. Bankers dealing with borrowers should have flexibility in deviating from guidelines according to the needed requirements. The fact is that the problem of overdues can partly be explained by strict adherence to the

guidelines of the apex institutions regarding the amount to be given for a particular scheme and the inability of the apex institutions to make quick amendments in the guidelines based on realities.¹⁵ However, if the banks can establish close contact with farmer borrowers many of the problems relating to loan recovery can be avoided.

15. Rajasekhar, D. and Suvarchala, G., "Institutional Credit and Overdues", Economic and Political Weekly, Vol.26, No.30, July, 1991, P.1819

CHAPTER 8



FINDINGS, CONCLUSIONS &
RECOMMENDATIONS



CHAPTER 8

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

In this chapter, the summary of findings relating to secondary data, the findings and conclusions of the empirical analysis carried out and the suggestions emanating from the findings are outlined. The policy issues that need consideration at appropriate levels for formulating future action projects are also highlighted.

8.A The secondary data analysis on the growth of RSR in India and Kerala shows a phenomenal growth from 1982-'83 to 1992-'93.

1. At the all India level RSR has increased from Rs.703 crores in 1982-'83 to Rs.2,359 crores in 1992-'93. In Kerala refinance has increased from Rs.22 crores in 1982-'83 to Rs.104 crores in 1992-'93.

2. It has been found that with respect to the quantum of refinance disbursed to the 14 districts in Kerala during 1991-'92, the highest refinance flow was to Kasargod district (Rs.9.19 crores) followed by Palakkad (Rs.8.51 crores). The least quantum of disbursement was in the case of Wyanad (Rs.2.02 crores).

3.1 The agency-wise analysis of the sanctions and disbursements under schematic lending from 1983-'84 to 1992-'93 shows that the Commercial Banks (CBs) received Rs.11.83 crores in 1983-'84, which increased to Rs.37.14 crores in 1992-'93.

3.2 The quantum of RSR disbursed to State Land Development Banks (SLDBs) in 1983-'84 amounted to Rs.12.05 crores, and it increased to the level of Rs.39.42 crores in 1992-'93.

3.3 The State Co-operative Banks (SCBs) got an amount of Rs.1.01 crores as RSR in 1983-'84, which increased to Rs.39.42 crores in 1992-'93.

3.4 The quantum of refinance flow to Regional Rural Banks (RRBs) in 1983-'84 was Rs.0.66 crores, which increased to Rs.6.86 crores in 1992-'93.

4. The purpose-wise analysis of the disbursement of RSR from 1982-'83 to 1992-'93 shows that the Plantation/Horticulture Scheme got the highest quantum of refinance i.e. Rs.193.15 crores followed by Minor Irrigation Rs.150.30 crores. The 'Fisheries' Scheme received the lowest quantum of refinance which was Rs.9.63 crores followed by the 'Land Development' scheme which got Rs.11.62 crores.

5. The highest quantum of ground level credit was disbursed in Ernakulam (Rs.69.07 crores) followed by Kozhikode (Rs.59.49 crores). Wyanad district got the least amount of ground level credit which is Rs.17.90 crores.

6.1 The coefficient of variation (CV) for RSR in Kerala from 1982-'83 to 1992-'93 was 41.23 per cent.

6.2 The purpose-wise and district-wise CV for RSR in 1992-'93 was 141.43 per cent and 29.23 per cent respectively.

6.3 A comparison between the CV of ground level credit (137.42 per cent) and of refinance disbursed (84.62 per cent) shows more variations in ground level credit.

In order to conduct the primary survey three districts viz, Pathanamthitta (PTA), Ernakulam (EKM) and Palakkad (PKD) of Kerala were purposively selected by keeping in mind certain indicators like the relative quantum of NABARD refinance and the allotment of funds for the major agricultural schemes. On the basis of the analysis on RSR disbursals carried out for the farmers in the three districts, two relatively important schemes viz, rubber plantation development scheme and minor irrigation scheme were taken up for the study. Under Minor Irrigation, three types were distinguished: new well, pumpset and new well with pumpset. The 245 beneficiaries were divided between the districts of PTA, EKM and PKD in the ratio 60:70:115 respectively. Along with the beneficiary sample a control group consisting of non-beneficiaries (75) were divided between the districts of PTA, EKM and PKD in the ratio 18:22:35 respectively. Thus the total farmer population size for the survey consisted of 320 farmers.

After the survey which was based on the feedback collected from the beneficiaries and with the help of credit institutions i.e. client banks (CBs and SLDBs) certain findings and conclusions on the two schemes viz, RPDS and MI were arrived at. The identified beneficiaries in accordance with the schemes formulated are seen to be effected by the loaning activities of the client banks, who avail refinance for these purposes from the National Bank. The study findings which are incorporated in Chapter Five and Six of the thesis explain the impact of the two schemes on the beneficiaries.

The major objective of the study was (i) to evaluate the role of NABRD in catering to the long-term agricultural credit requirements of Kerala from 1982 to 1992. (ii) This evaluation was done using the quantitative and qualitative criteria. The qualitative criteria attempts to study the quality of NABARD's refinance using selective criteria. The selective criteria used were:

- a. The efficiency of loan recovery.
- b. The impact and financial viability of NABARD - financed schemes
- c. The credit gap i.e. the gap between the unit cost approved by NABARD and the actual cost incurred on the investment.
- d. The gap between commitment and disbursements of NABARD refinance.
- e. The imbalances in NABARD refinance.

In pursuance of the above objectives the following hypotheses were formulated.

- i. The 'Eligibility Criteria' for NABARD refinance has positive effect on loan recovery.
- ii. The financial viability of the Rubber Plantation Development Scheme is higher than that of the Minor Irrigation Scheme.
- iii. The unit cost approved by the National Bank is not sufficient to implement the scheme.
- iv.a There is an inverse relationship between development and commitment disbursement (C-D) gap.

iv.b The C-D gap is higher with respect to plantation scheme when compared to minor irrigation scheme.

v. The NABARD's assessment of credit requirement is not scheme-specific but is only a general macro exercise. This results in imbalances in schematic refinance.

The study has made use of secondary data published by various agencies and the major source is from NABARD regional office, Thiruvananthapuram. The data and conclusions from the secondary sources have already been mentioned (8A). However, as the study is mainly related to the utilisation of RSR for which adequate secondary data and literature are not available, a primary enquiry using survey schedules was conducted. The field study findings correlated to the objectives and hypotheses of the study are given below.

8.B

1. The socio-economic particulars gives details on age, education and occupational pattern of the beneficiary farmers.

1.1 Majority of the Rubber Plantation and Minor Irrigation loanees were under the age group 50 to 75 years.

1.2 Analysis with reference to the education of the beneficiaries revealed that the rubber loanees had better or higher education than the minor irrigation counterparts.

1.3 The occupational trend of the loanees show that a higher percentage of minor irrigation loanees (70.59 per cent) were engaged primarily in agricultural activities while a proportionately lower percentage of the rubber planters (52.54 per cent) were engaged in the primary sector.

2. The technical particulars give information on the intercropping aspect and other technical aspects of Minor Irrigation.

2.1 The rubber planters are benefited by intercropping in the early stages of rubber plantation. Out of the 177 beneficiaries, 155 beneficiaries resorted to intercropping.

2.2.1 The credit gap for the rubber loanees show that the gap was the highest in PKD followed by PTA and EKM. The agency-wise analysis reveals that the gap was high with the CBs compared with that of SLDBs. In the case of Minor Irrigation also the agency-wise and district-wise trends were the same.

2.2.2 The above data prove that the credit gap is experienced by both the RPDS and MI loanees and also for loans disbursed by both agencies. This, in turn proves the hypothesis that the unit cost approved by the National Bank is not sufficient to implement the scheme.

2.3 Both the rubber planters and minor irrigation loanees experienced difficulties in getting the loan. About 78 per cent of the rubber planters and 82.35 per cent of the minor irrigation farmers experienced such difficulties.

2.4.1 The technical particulars with specific reference to minor irrigation show that majority of the farmers (79.41 per cent) had kept up to the recommended spacing between different minor irrigation works. The norm was most adhered to in PKD district.

2.4.2 With reference to the use of pumpsets with ISI mark it is revealed that 82.35 per cent of the minor irrigation population have used pumpsets with ISI mark. Here, again PKD stands first

3. The third aspect which relates to the financial particulars gives details on loan recovery, subsidy and security given, commitment-disbursement gap and time lag in the sanctioning of loans.

3.1 With respect to loan repayment the fully repaying category of loanees under RPD scheme accounted for 68.36 per cent, while for MI scheme it was only 42.65 per cent. An insignificant proportion never cared to repay their loans. It amounted to 4.52 per cent for RPDS and 1.47 per cent for MI. The district-wise trend shows that for RPDS the loanees in EKM stood first in the fully repaying category while for MI it is PTA.

3.2 The overall recovery percentage for RPDS is 77.28, while for MI it is 75.08. The agency-wise analysis shows that for RPDS the recovery percentage is high with SLDBs, while for MI it is higher for CBs. The district-wise trend shows that for both RPDS and MI, PTA district had the highest recovery.

3.3.1 Both the rubber planters and minor irrigation farmers received subsidy. It accounted for 68.36 per cent and 42.65 per cent respectively.

3.3.2 The district-wise study proves that for both the schemes, larger number of farmers in PTA received subsidy.

3.3.3 The average amount of subsidy received was higher for the rubber loanees.

3.4.1 The commitment-disbursement gap for the rubber loanees show that the gap was the highest in PTA followed by EKM and PKD. The agency-wise analysis reveals that the gap was high with SLDBs compared with that of CBs.

3.4.2 In the case of Minor Irrigation the agency-wise trend was the same. The district-wise study for Minor Irrigation shows that the gap was the highest in PTA, followed by PKD and EKM.

3.4.3 The findings lead to the conclusion that the CBs have been more efficient in disbursing refinance as they have been more prompt in providing refinance at the requisite time.

3.4.4 We can also conclude that the high C-D gap in PTA was as a result of the large number of NRIs in the district. This is because the NRIs being residents of foreign countries, are not directly in touch with bank disbursals. Since their loan disbursals are received by their 'Keepers' there can be time delay in receivals or disbursals from both the banker's side or keeper's side. Also the affluent nature of the NRIs allows them to claim the loan amount only as and when needed.

3.4.5 With reference to the reasons for the C-D gap it can be seen that in many cases money was not received at the requisite time. This necessitates an overhauling and rescheduling of the time for loan disbursals.

3.4.6 The higher the development of the district, the lower was its C-D gap. This is vivid from the higher developed district, Palakkad. This clearly indicates that the higher credit-absorptive capacity of the district, reduces the gap. It also proves the hypothesis that there is an inverse relationship between development and C-D gap.

3.5 Majority of the RPDS loanees experienced a time lag of one to two months between the date of application and date of sanction of loan. In the case of the MI beneficiaries, majority of them experienced a time lag of two to three months.

4.1.1 With reference to the rubber planting beneficiaries, 75.71 per cent had easy availability of planting materials, 85.31 per cent had accessibility of training in management of assets and only 3.95 per cent got extension services from NABARD.

4.1.2 Their non-beneficiary counterparts had equally good availability of infrastructure. This implies that there were no extra-benefits via infrastructure on a farmer simply because he had availed loan.

4.1.3 In the case of the minor irrigation population, most of the beneficiaries had easy availability of electricity /diesel, improved seeds and fertilisers.

4.1.4 Their non-beneficiary counterparts had even better availability of these materials except for extension services.

4.1.5 For rubber farmers the infrastructure availability was best in PKD, while for minor irrigation farmers the facilities were good in PKD and PTA.

4.2.1 Among the plantation beneficiaries only 37.29 per cent borrowed refinance from more than one bank. From their experience it is clear that majority of them favoured SLDBs. Similar were the experiences of the minor irrigation loanees.

4.2.2 It is seen that only the minor irrigation beneficiaries in PTA felt that CB and SLDB were equally good client banks.

4.3 With reference to the knowledge of NABARD refinance, majority of the farmers (77.16 per cent) under both the schemes knew about the refinance provided by NABARD, but it was the rubber loanees who were more aware.

4.4.1 The NABARD officials had visited only 13 out of 177 plantations and that too only once, while in the case of minor irrigation only 12 farmers out of 68 were visited. This shows that direct monitoring by NABARD was insufficient.

4.4.2 The district-wise study shows that among the districts for RPD scheme PTA got better follow-up, while for MI scheme it was PKD.

4.5.1 Among the plantation beneficiaries surveyed majority of them (51.98 per cent) were against direct financing.

4.5.2 The minor irrigation loanees supporting direct financing amounted to 70.58 per cent.

4.5.3 There were a number of loanees in both the schemes with no opinion on this issue.

4.5.4 The district-wise analysis shows that majority of the rubber loanees (72.91 per cent) in PTA district favoured direct financing.

4.5.5 When interviewed, the negative response by majority of the rubber loanees on direct financing was because they felt that from the point of view of practical implementation an apex level institution like NABARD could never reach the grass-root level. Contrary to this belief the minor irrigation loanees expressed the opinion that direct financing by NABARD could avoid the evils of the multi-agency system and thereby remove duplication in efforts.

5. The section on opportunity cost particulars gives a view on the possibilities of the next best alternative available for the beneficiaries with respect to nature of work, income and

employment. Here the verbal arguments, opinions and the economic sense of the beneficiaries were used as the tools for measuring the next best alternative.

5.1.1 Out of the 177 rubber plantation beneficiaries, 111 beneficiaries (62.71 per cent) stated that rubber plantation would have been possible even without the loan, while for 66 farmers (37.29 per cent) the loan was an absolute necessity for rubber plantation.

5.1.2 In the case of the 68 minor irrigation loanees, minor irrigation would have been possible for 25 farmers (36.76 per cent) even without the loan, while 43 farmers (63.24 per cent) claim that the loan was an absolute necessity.

5.2.1 From the income side, only 39.55 per cent of the rubber farmers stated that their alternative income would have been lower if the scheme were not implemented, while 44.63 per cent hold the view that their alternative income would have been the same and 15.82 per cent stated that their income would have been higher if the scheme were not implemented.

5.2.2 Among the 68 minor irrigation counterparts, 35.29 per cent stated that their alternative income would have been lower if the scheme were not implemented, 44.12 per cent hold the view that their alternative income would have been the same and 20.59 per cent have stated that their alternative income would have been higher if the scheme were not implemented.

5.3.1 With respect to employment, 39.55 per cent of the rubber farmers stated the possibility of a higher alternative employment without the loan.

5.3.2 In the case of minor irrigation, 2.94 per cent stated the possibility of a higher alternative employment without loan.

The aspects on opportunity cost clearly highlight the fact that the rubber loanees claimed better opportunity cost prospects than minor irrigation loanees. This was due to two reasons. Firstly, the rubber plantation loanees were more well off than their minor irrigation counterparts, for whom the loan was more necessary. Secondly, the changing higher interest rate structure for a longer span of time had more adverse impact on the rubber loanees.

6. The impact of the scheme on the beneficiary's income, employment and asset position form the core of the study. The benefits from the investments financed under the schemes accrued to the beneficiaries by way of increase in the irrigated area, increase in income and increase in on farm employment.

6.1.1 The total cost of investment per unit supported under the Rubber Plantation Development Scheme, was Rs.49,465.85/- of which the NABARD component accounted for Rs.24,105.49/-.

6.1.2 For minor irrigation the total investment per unit was Rs.26,028.32/- of which the NABARD component was Rs.9,423.54/- per unit of investment.

6.1.3 The district-wise trend of the NABARD investment pattern in both Rubber Plantation and Minor Irrigation Schemes indicate that the per unit investments were the highest in PKD followed by PTA and EKM.

6.2.1 The land-use pattern of the rubber plantation loanees shows that there was significant difference in the cropping pattern between the pre and post-loan periods. The total area under rubber

crop increased from 430 acres to 985 acres. The district-wise trend also shows the same pattern.

6.2.2 For minor irrigation the important crops raised on the benefited area were coconut and rubber. The total area irrigated by different categories of investment was only 19.14 acres in the pre-loan period, but it increased to 175.57 acres under the post-loan period. The incremental area brought under irrigation is 156.43 acres. The area under coconut and rubber in the post-loan period were 75.16 acres and 71.47 acres respectively.

6.3 The details of the cost incurred by the beneficiaries in the pre- and post-loan periods indicate that for both the schemes the labour cost component formed the major portion of total cost followed by material cost. The share of annual overhead cost was the least in both cases. The trend was the same at the district level and also for the non-beneficiaries.

6.4 The hired labour component for both the schemes has shown an increase in the post-loan period when compared with the pre-loan period. On the other hand the 'own labour' component has shown a decrease in the post-loan period when compared to the pre-loan condition. This was because with the larger area coming under cultivation, the need for a scientific approach to cultivation arises. This necessitated higher demand for skilled hired labour.

6.5 The income estimates give a very clear picture of the impact of the scheme. The per hectare net income of the RPDS beneficiaries was Rs.18,784/-. The district-wise study shows that it was high in EKM, Rs.26,564/- followed by PKD, Rs.21,440/- and PTA, Rs.13,242/-

6.6.1 The per unit net incremental income generated from RPDS was Rs.33,822.55/- (158.42 per cent). It was the highest in PKD, Rs.46,284/- followed by Rs.41,731/- in PTA and Rs.13,452/- in EKM.

6.6.2 For the MI scheme the net incremental income per unit of investment financed was estimated at Rs.12,089.36/- (48.26 per cent). It was the highest in EKM, Rs.15,286.11/- followed by Rs.12,715.13/- in PKD and Rs.5,312.66/- in PTA.

6.6.3 This clearly indicates that the per unit net incremental income generated for the beneficiary farmer was higher for RPDS than for MI.

6.7 The per unit net income of the minor irrigation loanees was Rs.37,141.29/-. It was the highest in PKD (Rs.45,124.84/-) followed by EKM (Rs.32,806.11/-) and PTA (Rs.18,362.83/-)

6.8.1 The per hectare incremental income-investment ratio for RPDS is 0.72:1. The ratio was the highest in PKD (0.81:1) followed by EKM (0.76:1) and PTA (0.58:1).

6.8.2 The incremental income-investment /output-cost ratio per unit of investment in the minor irrigation scheme was 0.46:1. The district-wise data show that the ratio was high in EKM (0.84:1) followed by PTA and PKD where the ratio was the same (0.38:1)

6.8.3 The ratio for RPDS was high mainly because the yield from rubber cultivation was greater than that of other multi-crops and also because the price of rubber has been showing favourable increase.

6.9.1 The purpose-wise classification of the incremental output-cost ratio per unit of investment in minor irrigation shows that

the ratio was high for the 'pumpset' scheme followed by 'new well with pumpset' scheme and 'new well' scheme.

6.9.2 The incremental income-investment ratio per unit of investment based on the size-wise classification of the beneficiaries was highlighted for both RPDS and MI schemes.

6.9.2.1 Among the rubber loanees, the medium farmer had the highest incremental income-investment ratio per unit of investment (1.52:1), followed by marginal farmer (1.32:1). The small farmer and large farmer had a lower ratio (1.21:1 each).

6.9.2.2 With reference to minor irrigation loanees, the ratio was the highest for marginal farmer (0.59:1), followed by large farmer (0.51:1), medium farmer (0.45:1) and small farmer (0.33:1)

6.10.1 The change in income levels of the beneficiaries between the pre and post-loan periods is clear from the 't' test conducted. In the case of rubber plantation, there has been significant difference at one per cent level. The district-wise trend was also the same.

6.10.2 In the case of the minor irrigation population the test was significant at one per cent level, but it should be noted that in PTA district there was no significant difference among the income levels.

6.10.3 A cross-sectional analysis is got from the comparison between the beneficiaries and non-beneficiaries. The data show that for the rubber loanees there has been significant difference in income levels at one per cent level. The district-wise trend shows that it follows the same pattern in EKM, but in PTA it was significant only at five per cent level and in PKD it was not significant.

6.10.4 Analysis of the minor irrigation farmers show that the difference in income levels between the beneficiaries and non-beneficiaries was not significant. The district-wise trend was the same except in EKM, where it was significant at one per cent level.

6.10.5 This data clearly infers the fact that there has been differences in income levels in the inter-temporal analysis, but there was not much significant difference in the income levels between the beneficiaries and their control group. This reasserts the fact the 'farmer loanee' did not get any special benefit only because he took the loan.

6.11.1 The change in income of a rubber planter was mainly as a result of the increment through changes in cropping pattern (61.08 per cent), while for the minor irrigation loanees it was mainly as a result of increment through productivity (36.91 per cent).

6.11.2 The district-wise trend was mainly the same for Rubber Plantation and also for Minor Irrigation except in PKD district, where the change in income was mainly as a result of increment through cropping pattern (74.72 per cent) for minor irrigation.

6.11.3 The data show that for a rubber planter a loan encouraged him to shift from other crops to rubber cultivation resulting in a larger acreage under rubber. In the case of minor irrigation farmers, the increased productivity in the existing landholding was the result of better irrigation facilities on land.

6.12 Besides the increase in income of the beneficiary farmers, the investment activities financed under the scheme also created substantial additional employment opportunities.

6.12.1 The investment in rubber plantation under the scheme has created additional employment opportunities of 3,014 mandays for own labour and 63,586 mandays for hired labour per year. The per hectare estimates are found to be 6 mandays and 117 mandays respectively.

6.12.2 The investment in minor irrigation works under the scheme had created total incremental employment opportunities of 2,206 mandays for own labour and 4001 mandays for hired labour per year. The per hectare incremental own employment opportunities for minor irrigation were 22.52 mandays and for hired employment it was 40.85 mandays.

6.12.3 In EKM the incremental own labour employment in mandays for RPDS was negative. It was also seen that the incremental own labour component for the MI scheme in the districts of PTA and EKM are nil. This further reinstates that the own labour component did not increase or in some cases, even decreased in the post-loan period.

6.13.1 The changes in asset position of the selected beneficiaries also brings out the impact of the scheme. The per unit total incremental asset generated per year via RPDS was Rs.10,179.81/- of which Rs.7,237.6/- (71.10 per cent) constitute physical asset and Rs.2,942.21/- (28.90 per cent) livestock asset. The district-wise trend was basically the same though with minute changes.

6.13.2 In the case of minor irrigation the per unit total incremental asset generated per year was Rs.9,061/- of which Rs.7,194/- (79.40 per cent) form physical asset and Rs.1,867/- (20.60 per cent) livestock asset. Here also the district-wise trend was basically the same.

6.13.3 It is clear from the data that the per unit asset generated was higher for rubber plantation than for minor irrigation. Also both the schemes have generated more physical assets than livestock assets.

6.14 To get an understanding on the general impact of NABARD refinance, questions were asked on the beneficiary's opinion on NABARD refinance.

6.14.1 With reference to the assessment of credit requirements, around 30 per cent of the RPDS farmers stated that NABARD refinance was a grass root level exercise while 70 per cent felt it was a general macro exercise. The district-wise trend was basically the same.

6.14.2 For the MI beneficiaries, on the basis of the experiences they confronted, about 21 per cent claimed that NABARD refinancing was a grass root macro exercise, while 79 per cent of them claimed that it was a general macro exercise. The district-wise trend was the same.

6.14.3 The data clearly prove that the apex level institution, NABARD, has not been able to keep up with the grass-root level requisites of the farmers. The refinancing operations have not been able to move with local conditions and is not region-specific. This could be one of the reasons why the unit cost fixed by the National Bank is insufficient to meet the real cost.

7. The lending efficiency of the Bank was studied using selected criteria like the loan repayment aspect, source of repayment, the effect of the Eligibility Criteria on loan recovery, the credit gap involved in the loaning process, the commitment-disbursement gap involved at the stage of client bank lending, the follow up action

by NABARD officials and the regional imbalances involved in refinance disbursements. The economic efficiency of the scheme, which has been measured by its impact on income, employment and asset position during the pre- and post-loan periods have already been analysed.

7.1 The efficiency measured from the recovery angle prove that it was efficient due to the following reasons:

7.1.1 The overall recovery percentage was 77.28 per cent for rubber plantation loanees, while for minor irrigation it was 75.08 per cent.

7.1.2 The source of repayment aspect shows that, for both the schemes taken together (RPDS and MI), recovery through agricultural income alone accounted to 75.54 per cent. It was higher for MI than for RPDS. The greater the recovery from the agricultural source alone, the better the impact of the scheme.

7.2.1 The effect of NABARD's Eligibility Criteria for refinancing is tested by analysing the differences in recovery percentages between bank's general agricultural term lending and term lending with reference to NABARD's refinance. The recovery percentage for schematic refinance, was around 77 per cent, while for the bank's general agricultural term lending it is only 68 per cent. The district-wise trend was the same.

7.2.2 This finding proves the hypothesis that the Eligibility Criteria for NABARD refinance has a positive effect on loan recovery.

7.3. With reference to meeting the credit requirements, the gap in credit requirement per unit of investment was taken as the index.

7.3.1 The pooled analysis (i.e. for RPDS and MI together) shows that the credit gap per unit of investment was Rs.10,193.30/- (27 per cent).

7.3.2 It was Rs.13,135.12/- (27.45 per cent) for the rubber plantation scheme alone and Rs.2,535.90/- (22.09 per cent) for the MI scheme.

7.4 The third criteria for measuring lending efficiency is the commitment-disbursement gap.

7.4.1 For the pooled analysis per unit of investment the gap amounted to Rs.1,648.63/-, while the gap percentage was 7.60.

7.4.2 The C-D gap was 7.85 per cent for the RPD scheme, while it was 5.96 per cent for MI.

7.4.3 Thus the (ivb) hypothesis of the thesis, that the C-D gap is higher with respect to RPDS than the MI scheme stands proved.

7.5 The follow-up action provided by the apex bank was also a criterion to measure its lending efficiency. The data collected show that out of the 245 beneficiaries, only 25 (10.20 per cent) were visited by NABARD officials and that too only once. About 89.80 per cent (220) were never visited. The scheme-wise study shows that though the monitoring was poor for both the schemes it was comparatively better for MI.

7.6 The economic aspects of lending efficiency are income, employment and asset position.

7.6.1 For the pooled analysis the net incremental income generated per unit of investment was Rs.28,934/- which amounts to about 125 per cent.

7.6.2 In the pooled analysis the mean value of net income between the pre -and post-loan periods shows that there was significant difference at one per cent level. The cross-sectional analysis (i.e. the difference between beneficiaries and non-beneficiaries) of the pooled data show that there was no significant difference in income levels. But the individual scheme-wise data show that there was difference at one per cent level for the Rubber Plantation Scheme.

7.6.3 The pooled data on the per unit incremental employment generated in mandays show that the incremental own labour component was around 21 mandays while the hired labour component forms 276 mandays.

7.6.4 An overview of the incremental asset generated per unit of investment for RPDS and MI together show that the total incremental asset per unit amounted to Rs.9,300/-, of which Rs.2,365/- was the increment in livestock asset, while the incremental physical asset came up to Rs.6,935/-.

Thus the economic criteria for lending efficiency speak positively of NABARD's refinance.

7.7 The growth with equity theory favours a balanced pattern of development which implies that the regional imbalances in credit supply should be minimal. Using the primary and secondary data available, we have measured the development of the studied districts and accorded ranks.

7.7.1 Based on this criteria PKD district is ranked first followed by PTA and EKM. It is interesting to find that the most developed district PKD got the second highest quantum of refinance whereas

PTA with second development rank got the highest refinance. It should be noted in particular that EKM which was assessed as the least agriculturally developed district got the lowest amount of refinance from NABARD.

7.7.2 This clearly indicates the fact that the lower the development of the district, the lower the quantum flow of refinance. This finding supports the fifth hypothesis that RSR was beset with imbalances.

7.7.3 One reason for imbalance was because NABARD's assessment of the credit requirement of the beneficiaries was a general macro exercise with no grass - root level monitoring.

8.1 The benefit-cost ratio calculated on a per hectare basis using discount factor at 15 per cent shows that the rubber plantation development scheme is financially more viable than the minor irrigation scheme.

8.2 Among the three districts Rubber Palntation Development Scheme is the most viable in EKM district (1.66) followed by PKD (1.60) and PTA (1.56). The reason for the high benefit-cost ratio in EKM and PKD district could be as a result of the more scientific cultivation and better farm practices. In PKD district the high number of large farmers is also a reason.

8.3 The benefit-cost ratio for the Minor Irrigation Scheme was computed separately for all the purpose-wise classifications of the scheme.

8.3.1 The pooled ratio (i.e. for all the districts together) for the 'new well' scheme is 1.55. The 'new well' scheme is most viable in PKD district (1.57), followed by PTA (1.54) and EKM (1.42).

8.3.2 Analysis of the 'pumpset' scheme shows that the pooled benefit-cost ratio is 1.50. The scheme is most viable in EKM (1.54) followed by PKD (1.52) and PTA (1.19). One of the reasons for low benefit-cost ratio for the pumpset scheme in PTA is because of the lack of use of ISI pumpsets in the district. Moreover majority of the farmers in PTA are non-resident Indians who have little time for agricultural activities.

8.3.3 The analysis of the 'new well with pumpset' scheme shows that it is viable in all districts. The wholistic view of the districts for 'new well with pumpset' scheme shows that the scheme is viable with a benefit-cost ratio of 1.49. The scheme is the most viable in PKD (1.51) followed by PTA (1.49) and EKM (1.37). One of the reasons for the low benefit-cost ratio in EKM is the large number of marginal and small farmers in the district.

8.3.4 A wholistic approach to the various purposes of lending under minor irrigation, including all the three districts together assess the ratio as 1.51. Of the various schemes, the 'new well' scheme (1.55) is the most viable followed by 'pumpset' scheme (1.50). The 'new well with pumpset' scheme had a benefit-cost ratio of 1.49.

8.4 The financial viability analysis of the RPDS and MI schemes prove that on a per hectare basis the ratio is higher for RPDS (1.59) than for MI (1.51). This proves the second hypothesis of the thesis.

8.5 The reason for this could be that the RPDS loanees are more well off than their minor irrigation counter parts. The rubber planters exposure to better farm practices and technology could also be a reason behind it.

9. The major factors influencing loan recovery from the borrowers angle are farm size, expenditure, income, income from the project and financial viability of the scheme. From the lender's angle, the credit gap involved, the nature of lending i.e. general lending or schematic lending, the loan size, the type of client bank and the follow-up action by the banks are the cited variables.

9.1 The pooled regression model for the RPDS explains 12.30 per cent variation in the dependent variable.

9.2 The significant independent variables affecting the recovery for RPDS loans are type of bank (X10), the financial viability of the scheme (X5), the nature of lending i.e. general lending (X7), expenditure of the beneficiaries (X2) and farm size classification of the beneficiary (X1).

9.3 The pooled analysis for RPDS infers the fact that variables on the lenders angle have a strong influence on recovery. Variable X10 (CB lending) has a negative influence on recovery which indirectly implies that SLDB lending is better from the point of view of recovery.

9.4.1 The district-wise comparison between the factors affecting loan recovery for RPDS show that among the eleven variables, the important variables are X1, X2 and X11 viz, farm size, expenditure and follow-up action. The variable X2 has an inverse relationship on recovery.

9.4.2 Analysis on the multiple regression coefficient (R²) for RPDS between various districts show that in EKM the ratio was capable of explaining 63.20 per cent variation in loan recovery while in PKD it explained only 13.87 per cent and in PTA 12.05

per cent variation. Thus the explanatory variables appear to be a significant explanation only for the district of EKM.

9.5 For the Minor Irrigation Scheme the pooled regression model shows that the important factors affecting recovery are X10 (CB lending), X8 (schematic lending), X1 (farm size) and X2 (expenditure). The R^2 being 0.44328 explains 44.33 per cent variation in loan recovery.

9.6 At the district-level variables X1, X2 and X5 are significant. A comparison of the R^2 for MI in the districts shows that for PTA the independent variables explain 97.90 per cent variation in the dependent variable, while in EKM it explains 98.36 per cent and in PKD it explains only 11.76 per cent.

9.7 The pooled RPDS and MI model shows that the important factors affecting loan recovery are X10, X7, X1 and X2, of which X10, X7 and X2 are negatively related to recovery. The R^2 for the pooled scheme-wise and the district-wise model explains only 10.98 per cent variation in the dependent variable.

9.8 At the district-level variables X1 and X2 are significant. The 'farm size' was important for PTA district while 'financial viability' was important in EKM and 'follow up action' along with 'scheme viability' were important factors in PKD. A comparison of the district-wise R^2 shows that in PTA district 15.89 per cent variation were explained by the independent variables, while in EKM it was 62.69 per cent and in PKD only 7.91 per cent.

9.9 Thus the regression models at the micro and macro level show that the factors on both the borrower's and lender's angle influence recovery. As an apex level institution, the National Bank could improve recovery from the lender's angle by a closer

monitoring of the activities of the client banks. From the borrower's angle, a grass- root level contact with the beneficiary borrowers could improve the recovery climate. Thus the need for a new initiative from the part of the National Bank was felt.

Recommendations

In the light of the above findings and conclusions a number of recommendations are made to improve the rural credit delivery system, which, in turn may bring about favourable impact on the farmer community as a whole. While doing so, the recent policy changes announced by the government with respect to the rural credit structure, and the latest ideas expressed about the rural credit system by a few scholars are also kept as a theoretical base. While policy makers and evaluators have in recent years been stressing the need to ensure that loaning is socially productive the issue as yet lacks clarity. There are serious reservations about the social productivity of most loaning being undertaken in non-vital areas. For stimulating the tempo of agricultural production, it is imperative that the farmers must have the essential pre-requisites like fertilisers, improved seeds, irrigation facilities, modern implements, marketing facilities etc. It is obvious that without adequate and timely credit they would not be able to make use of these essential inputs.

1. On the basis of the study relating to the first research problem, the problem of overdues and recovery performance of the banks, a few suggestions are made.

1.1 The existence of multi-agency approach in providing agricultural finance may tend to create more confusion and difficulties to the borrowers in rural areas. During the field survey

many borrowers express their desire to borrow from a single institution.

1.2 The viability of lending to the small farmer can be improved by securing for them the inputs, marketing and other extension services. Organisational support which can improve backward and forward linkages of such categories of farmers can improve their viability, creditworthiness and loan recovery.

1.3.1 The problem of overdues arising out of crop failures and occurrence of natural calamities cannot be tackled by means of ad hoc grants from state governments or by writing off these bad debts. The best remedy would be the scaling down of debts according to repaying capacity and extension of the time for recovery in easy instalments. This will create proper climate for smooth flow of RSR.

1.3.2 The policy of writing off the bad debts may be resorted to in rarest of rare cases, and that too only in respect of genuine and non-wilful defaulters.

1.4.1 The political involvement in the conduct of "Loan Melas" and agricultural debt relief has reduced the loan recovery of financial institutions. This has eroded the lendable resources of many banks. Keeping away the political interference would make the banks serve better in the rural areas.

1.4.2 The banking sector of the country should be subject to minimum government control and interference. This is required to enable banks to develop self-reliance, self-confidence and to eliminate politicisation.

1.5 The problem of mounting overdues can be reduced by taking necessary steps to create recovery cells in each district or block, headed by an authority.

1.6.1 The banks should initiate dialogue with defaulting borrowers for phased recovery of loans.

1.6.2 Setting up of tribunals to recover banks and financial institution debt may force the wilful defaulters to come to terms with banks.

1.7 The NABARD should collect names of all wilful defaulters and circulate such lists to all banks so that they could not borrow funds from other banks.

1.8.1 For accelerating the process of rural loan recovery and resource management, simplification of legal documents and information system is desirable.

1.8.2 Massive training programme for the beneficiaries for the proper use of the credit inculcating in them the ethics of repayment is a recommended measure.

1.8.3 There was a great laxity in post-disbursement supervision. Once the loan was disbursed, the field officers in many cases did not visit the beneficiaries to verify whether the scheme had been implemented or not. It is recommended that bank officials may conduct frequent field visit.

2.1 The question of viability of loans sanctioned to the borrowers has to be answered. Theoretically two opposite views have been put forward:

a. When subsidised loans are given to the farmers it could help them to become economically viable.

b. If a bank goes on expanding its credit facilities to a large number of borrowers its viability will be at stake.

A Policy inculcating both the aspects of theory should be formulated.

2.2.1 The results of the present study suggest that subsidy is an essential component which helped the schemes undertaken by the farmers to become financially viable. Implied in this is that without subsidy the benefit-cost ratio would be low. Therefore, subsidy is indispensable while sanctioning loans to borrowers.

2.2.2 However, it was observed that subsidy has become a source of misutilisation and exploitation. That is, in some cases the subsidy was adjusted with the loan to show a good recovery performance and in a few cases, officials misappropriated the subsidy amount.

So a policy measure striking a balance between the two is desirable.

2.3 Consistent with the national objectives, the financing institutions i.e. banks should choose those projects which would have the following characteristics.

2.3.1 Projects which have better distribution effect.

2.3.2 Projects which increase benefits rapidly.

2.3.3 Projects in areas which are relatively less developed.

2.3.4 Projects which would benefit the most vulnerable sections of the community.

2.3.5 Projects which have greater employment potential.

2.4.1 In the Rubber Plantation Development Scheme the violation of plant density norms was observed. Lack of technical guidance/extension support resulted in the plants getting affected by root wilt, bud rot, leaf rot etc. There is a need for setting up preventive measures to combat rotting of rubber trees.

2.4.2 From the point of view of minor irrigation, nonavailability of complete pumping system (CPS) certificates, variations in the diameter of the suction and delivery pipes, financing of non ISI mark pumpset and delay in getting power connection were observed. Technical guidance was not provided to the beneficiaries in selection of well sites. In some cases higher HP pumpsets were also installed. Spacing criteria was also not followed. It can be avoided by extending training facilities to the loanees. The major drawback in the implementation of the minor irrigation scheme was that the latest ground water survey report and base maps were not available. All these problems should be done away with, if the financial viability of the scheme is to be enhanced.

2.5 In order to successfully implement minor irrigation scheme in the state, it would be necessary to take the following steps:

2.5.1 State Planning Board may accord priority for energisation of pumpsets.

2.5.2 Government may adopt a more vigorous approach towards digging of wells and installation of pumpsets and facilitate

implementation of a much more larger programme with the help of institutional credit.

2.6.1 With regard to financial viability flexible interest rate is suggested.

2.6.2 The need for scrutinising the quantum of non-operating fund and the coverage of mandatory lending is suggested.

2.7 Without financial viability the credit investments would have to depend on annual appropriations from governments to cover its costs and, therefore, would be susceptible to political influence. This should be avoided.

3. With reference to the third research problem, the credit gap, it was noted that there were wide variations in costs from one district to another.

3.1 It is necessary to fix location and activity specific unit costs.

3.2 The credit requirements for agriculture should take into account not only the credit needs of the agricultural production sub-system, but also of the agricultural system as a whole.

3.2.1 This should include the credit required for input distribution from the factory to the farm for the wholesale and retail level.

3.2.2 In the credit for input distribution, preferential treatment may be given to the co-operatives.

3.2.3 If the input distribution is handled by the private sector it should get the same priority as any other item of indirect credit presently being given in the agricultural credit.

3.3 Credit should be regionally distributed on the basis of the proper assessment of credit requirements.

3.4 The findings of the study indicate the need for the banks to take adequate steps for effective supervision and rigorous follow-up with a view to ensure that the bank loans are utilised for the purposes for which they are extended. This calls for a more realistic assessment of the credit needs of the borrowers, which, if done before the stages of loan sanctions and disbursements, could avoid credit gaps and bring about better long-term results in rural refinancing.

3.5 The credit requirements of the small farmer should be seriously looked into. The credit rationing with the reduced outlay is going to be a real challenge in the years to come.

4. With respect to the commitment-disbursement gap the following suggestions are made:

4.1 The commitment-disbursement gap arises due to poor monitoring of the requisites of the borrowers. The gap can be carefully avoided by direct monitoring and grass-root level exercise by the National Bank.

4.2.1 Ground level or field level linkages of voluntary organisations are most important in this process. The credit institutions may have to take an initiative in developing close contacts with such groups for both savings mobilisation and proper appraisal and end-use of credit.

4.2.2 Some specific steps the credit institutions may take are:

- a. Make available to these groups and their members information on credit disbursements, the unit cost of the schemes etc. in simple language.
- b. Orientation-cum-training camps for the members of voluntary organisations.
- c. The technical and other departments of the government must be involved in these tasks.

4.3 Involvement of voluntary organisations has been suggested as a way of improving bank-client interaction and at the same time reducing transaction costs of the borrowers and the bank.

4.4 Considering the larger branch network and lower commitment-disbursement gap of the major banks in a district, it will be a useful strategy to concentrate efforts on strengthening the RSR flows to them.

4.5.1 With reference to the commitment-disbursement gap it is recommended that a complete overhauling and change in the pattern of loan disbursements is a must.

4.5.2 The banker should be able to sense the requirements of the farmer and must be in a position to lend out the loan instalments as and when it is needed.

4.5.3 A restructuring of the loan instalment disbursement specific to the scheme concerned is a desired recommendation.

5. As it is seen there is a direct relationship between development and quantum flow of refinance thereby magnifying imbalance. In this regard the following measures are proposed;

5.1 In order to attain equitable distribution of bank advances among different sections within the respective sectors in the priority sector, the policy pertaining to the priority sector lending has been modified from time to time. As regards reduction of the priority sector targeted credit, there is a need to carefully assess the credit requirements of the economically weaker sections of the society.

5.2 Reduction in regional imbalances will be possible only by accelerating the rate of growth in the less developed areas significantly. Action oriented research for agriculture and rural development may help to attain this goal.

5.3.1 In fact the practices followed so far have been mostly unfair and unsound from the point of view of making proper advances to the rural people. The selection of beneficiaries has been found, very often defective, in the sense that it has not been need based.

5.3.2 It has also come to light that loans advanced for productive and agricultural purposes are misutilised and diverted to consumption and other non-productive uses. This should be done away with.

5.4 In order to reduce the disparity in the disbursement of agricultural credit per hectare, the measures to be taken are:

5.4.1 Regional variations as per banking variables have to be made minimum as it has the highest correlation to the agricultural credit per hectare. For that all the districts should be equitably developed in banking activities.

5.4.2 Agricultural credit is to be given in those places where the need for agricultural credit is high.

5.4.3 New bank branches are to be opened in those places which are underdeveloped or lacking in banking variables.

5.4.4 Necessary steps are to be taken for reducing misutilisation of credits.

5.4.5 Ground level or field level linkages of voluntary organisations are more important in this process. Credit institutions may have to take an initiative in developing close contacts with such groups for savings mobilisation and proper appraisal and end use of credit.

5.4.6 Banks today try to finance 'viable' schemes only. They do not try and develop potential of the schemes already viable. This inevitably limits their role and tends to perpetuate the established status quo between sections of the people and between geographical areas. This should be eliminated from the rural credit system.

6. Other Recommendations

6.1. A major recommendation of current relevance is on direct financing by NABARD. With reference to this issue, the researcher feels that there is not much prospect for direct financing unless certain structural changes are brought about within the banking system. Decentralisation of the banking activities of NABARD and incorporation of the services of voluntary organisations and self-help groups are recommended for the success of direct financing.

6.2 Referring to degradation of land and shifting cultivation, NABARD should study viable projects to rectify deficiencies in the investment pattern.

6.3 Lending to small farmers is more complicated than lending to large farmers. No single approach is best. It is feasible to use alternative delivery systems at the local level while at the same time maintaining a single apex structure.

6.4 Any rural credit policy of the nation has to comprehensively examine the credit management policies of the lending institutions including the human resource development aspects and should strive to develop a fully professional and competent team of rural credit managers at all levels.

6.5 The objective of the National Bank should be two fold:

6.5.1 To re-establish the macro economic foundations of development strategy and

6.5.2 policy formulation in developing countries, even for meeting short run shocks, must be based on an awareness of long run consequences.

NABARD should participate in the process of economic change giving due attention to the needs to adapt itself to the facts of globalisation and economic reform. At the same time, in any complex economy, eternal vigilance is the price of liberalisation. The National Bank being the apex bank in the sphere of agriculture and rural development, it has an important role in this task as a vigilant guardian of the agrarian economy of India.

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APPENDICES

APPENDIX I. A.

SCHEDULE 1

RUBBER PLANTATION DEVELOPMENT SCHEME

1. Identification Particulars

- 1.1 District
- 1.2 Taluk
- 1.3 Panchayat
- 1.4 Name & Address
- 1.5 Community SC/ST/Backward
- 1.6 Scheme Area
- 1.7 Name of the Scheme
- 1.8 Number of the Scheme
- 1.9 Name of the Bank Branch
- 1.10 Period of the Loan

2. General Particulars

- 2.1 Type of Plantation
- 2.2 Whether individual planting
or group planting
- 2.3 Area of land holding
- 2.4 Area under plantation
- 2.5 If irrigated, source of
irrigation
- 2.6 Details of cropping pattern
- 2.7 Demographic Particulars

Sl.No	Name	Relationship to the head of the household	Sex	Age	Educational qualification (give details)	<u>Occupation</u> Main. Sub.	Other details if any

2.8 Expenditure details

a) Food items : (Monthly expenditure of Family)

b) Non-food items (Monthly)

Rent

Fuel

Education

Travelling

Medicines

Others

Total

c) Personal expenses of the beneficiary

Smoking

Drinking

Others

:

d) Total monthly expenditure

2.9 Savings

a) Bank Deposit

b) PF/LIC

c) Deposits in Indigenous financial Insts	
d) Company shares	
e) Chit fund	
f) Others	:
	<hr/>
Total	
	<hr/>

3. Technical Aspects

- 3.1 Details of intercropping in early stages of growth of plantation
- 3.2 Cost estimation of items of investment(Rs./acre)
 - a) Costs during the first year
 - 3.2.1 Clearing the area and preparation of the land
 - 3.2.2 Lining and Pegging
 - 3.2.3 Pitting
 - 3.2.4 Filling of pits
 - 3.2.5 Planting cost
 - 3.2.6 Shade Planting
 - 3.2.7 Plant protection
 - 3.2.8 Weeding and intercultivation
 - 3.2.9 Manuring and fertilisation
 - 3.2.10 Irrigation
 - 3.2.11 Any other item specific to the crop

Total cost	:
	<hr/>
	<hr/>

- b) Second and subsequent years

3.2.12 Vacancy filling

3.2.13 Weeding and interculti-
vation

3.2.14 Plant protection

3.2.15 Manuring and fertilisation

3.2.16 Irrigation

3.2.17 Shade regulation

3.2.18 Pruning and training

3.2.19 Any other operation

:

Total cost

:

Grand Total

3.3 Cost approved
Gap in requirement

3.4 Real costs

3.4.1 Did you undergo any
difficulty to get the loan

: Yes/No

3.4.2 If yes, the days of labour
you lost in getting the loan

3.4.3 Did you have to make any
extrapayment to get the loan

3.4.4 How long did it take from the
date of application to get the
loan

3.4.5 Other difficulties if any

4. Financial Aspects

4.1 Rate of interest

a) NABARD to Bank

b) Bank to Borrower

4.2 Period of Loan

Grace period

4.3 Date of disbursement of loan

4.4 First instalment due

4.5 Repayment schedule : Debit Credit Overdue

Remarks

4.6 Down payment made

4.7 Details of security made

Types of security

- 1) Gold
 - 2) Land
 - 3) Personal security
 - 4) Other financial documents
 - 5) Other
- 4.8 Source and extent of availability of subsidy
- 4.9 Total loan committed for the unit

4.10 Loan disbursements made

First disbursement Rs.

Second disbursement Rs.

Third disbursement Rs.

Fourth disbursement Rs. etc.

4.11 Commitment-disbursement gap :

4.12 Reasons for the gap

- 4.13 Difficulties if any
- 4.14 Suggestions
- 4.15a) Date of loan application
 - b) Date of disbursement of loan
 - c) Delay in disbursement
- 4.16 Category of Delay in sanction
 - a) One to two months
 - b) Two to three months
 - c) Three to six months
 - d) Above six months
- 4.17 Whether loan instalments are paid regularly
- 4.18 If yes, whether from the income generated by the project alone or partly supported by income from other sources.
- 4.19 If not state
 - a) Reasons for non-payment
 - b) Number of instalments defaulted
 - c) Amount defaulted

5. Infrastructural Aspects

- 5.1 Whether arrangements for planting material (shade trees, seedlings, pesticides etc.) are available
- 5.2 Do you require any training in management of asset
- 5.3 If yes, do you receive any technical guidance or extension service

- 5.4 Do you find any difficulty in approaching a Bank for financial help
- 5.5 If yes, details of difficulty
- 5.6 Have you borrowed NABARD refinance from more than one Bank
- 5.7 If yes, give details of your experiences with each bank
- 5.8 Do you know the NABARD provides indirect finance to the agency institution and thereby to you Yes/No
- 5.9 If yes, do you know what proportion of the financial assistance given to you is financed by NABARD
- 5.10 Did any official from NABARD visit your land or the scheme area Yes/No
- 5.11 If yes, give the number of such visits and purpose of visits
- 5.12 Did any official from the *Bank visit your land Yes/No
- 5.13 If yes, give the number of such visits and purpose of visits
- 5.14 Do you feel that the inspection of units
- a) By officials have any impact on the returns of the projects
- b) If yes, whether positive or negative
- 5.15 Do you feel that direct financing by NABARD will be better than refinance as given today

* The client Banks namely Commercial Banks and State Land Development Bank.

5.16 Difficulties faced if any in selling of products

6. Opportunity cost

6.1 Have you benefitted by loan Yes/No

6.2 Had you not got the loan, what work would have done

6.3 What would be your income therefrom (per month)

6.4 What would be your employment therefrom

6.5 If the benefits accrued from this alternative is higher

a) Why did you opt for the NABARD loan

b) Did you take the loan on your own choice : Yes/No

c) If no, who encouraged you to take it

d) Did you get the scheme you wanted Yes/No

e) If no, what was the scheme of your choice

f) Why did you prefer that scheme to the present scheme :

7. Impact of the scheme

7.1 Income :

Name of crop	Area under cultivation	Total yield (Kg./No.)	Total value	Cost incurred			Net income
				*M.C.	L.C.	A.O. T.C.	
Pre-investment year							
Post-investment year							

* : M.C. : Material Cost, L.C. : Labour Cost, A.O. : Annual Overhead , T.C. : Total Cost.

7.2 Employment

Duration of Employment in Agricultural sector:

Own/Family Labour			:	Hired Labour		
Hours/Day	Days/Month	Man days	:	Hours/day	Days/month	Man days per year
h/d	d/m	M.D.	:	h/d	d/m	M.D.
Before			:			
			:			
			:			
			:			
			:			
After			:			
			:			
			:			
			:			
			:			

7.3 Asset Position

Details of Assets

Land and Building	Livestock	Agricultural implements	Bank money	Other investments if any	Any others
Before					
After					

7.4 Follow up questions to study the impact of the loan

7.4.1 Whether benefitted by way of additional income from the loan financed activity : Yes/No

7.4.2 If yes, any tangible improvements in living conditions, acquisition of durable assets, improved housing etc.

7.4.3 What was the acreage yield of crops at the pre-investment stage

7.4.4 What is the acreage yield of crops at the post-investment stage

7.4.5 Is there any increase in

a) Cropping intensity consequent upon investment : Yes/No

b) Increase in productivity

7.4.6 If yes, give details

7.4.7 Has there been any improvement in cropping pattern consequent upon investment : Yes/No

7.4.8 If yes, give details

7.4.9 Has there been adoption of superior quality of inputs and improved methods so as to increase the gross value of output : Yes/No

7.4.10 If yes, give details

7.4.11 Has there been any saving in cultivation cost consequent upon investment

7.4.12 If yes, give details

7.4.13 Do you think that as a result of NABARD assistance there has been any change in your family with regard to : Better No change Worse

a) Income

b) Employment

c) Asset position

d) Indebtedness

e) Any other(specify)

- | | <u>Before</u> | <u>After</u> |
|--|---------------|--------------|
| 7.4.14 Changes with regard to | | |
| a) Income | | |
| b) Employment | | |
| c) Asset position | | |
| d) Indebtedness | | |
| e) Any other(specify) | | |
| 8. Follow up Questions for General Information | | |
| 8.1 How was your credit requirement assessed | | |
| 8.2 Are credit requirements built up from the grass root level or is it a general macro exercise | | |
| 8.3 Are NABARD limits based on the detailed disaggregation of the beneficiaries requirement or is it again an imposed central system : | | |

APPENDIX I B

Only the differences from Schedule-1 are cited here. Rest of Schedule-2 is similar to Schedule-1.

SCHEDULE - 2

MINOR IRRIGATION

2. General Particulars

- | | |
|-------------------------------|---|
| 2.1 Type of Irrigation work | 1) New Well
2) Pumpset
3) New Well with pumpset |
| 2.2 Present cropping pattern | |
| 2.3 Yield and income per acre | |

3. Technical Aspects

- 3.1 Whether there has been spacing between different types of minor irrigation works
- 3.2 If yes, the source from which information was received
- 3.3 Whether the minor irrigation machinery have ISI approved mark :
- 3.4 Cost estimation of minor irrigation work and other related expenses
- A) New well
- B) Diesel pumpset
- C) Electric pumpset
- D) New Well with Pumpset

A. NewWell

Cost approved	:	
Total cost	:	

B. Diesel Pumpset:

1. Diesel engine : HPRPM.....

2. Pump (centrifugal) : HPRPM.....

3. Cost approved : _____

Total cost (Rs.) : _____

C. Electric Pumpset

1. Electric motor : HPRPM.....

2. Pump (centrifugal) : HPRPM.....

3. Cost approved : _____

Total cost : _____

D. New Well with Pumpset

1. Cost approved for New Well : _____

2. Cost approved for Pumpset : _____

Total cost : _____

5. **Infrastructural Facilities**

5.1 Whether electricity or diesel for pumpsets, engines and others are available :

5.2 Whether improved seeds, fertilizers and pesticides are available

5.3 Sources of availability of construction materials, equipments, capital assets, irrigation system, others

7. Impact of the Scheme

7.1 Income

Details of the yield of different crops sown `before'and `after' the receipt of the benefit

Year	Name of the crop	Area in acres	Cost of cultivation			Yield Value	Net income
			* M.C	L.C	A.O. T.C.		
Pre-investment year							
Post-investment year							

*M.C. Material Cost,L.C.Labour Cost, A.O.Annual Overheads,T.C.Total Cost

7.4 Follow-up questions to study the impact of the loan

7.4.1 Did you at any time attempt developing an irrigation source and fail? : Yes/No (Completely/Partially)

7.4.2 If yes, what was the reason for the failiure : (1)
(2)

7.4.3 Who suggested the location of the source

7.4.4 Is the present irrigation facility enough to meet your whole requirement

7.4.5 If `No',do you have any plan to develop sources of irrigation and for installing lifting equipment : Yes/No

7.4.6 If yes, give details

7.4.11 Is there any increase in cropping intensity consequent upon investment : Yes/No

N.B. The Schedule used for the Non-beneficiary is similar to the one used for the Beneficiary except exclusion of bank-wise details for the Non-beneficiary.

APPENDIX II A - FINANCIAL VIABILITY ANALYSIS (RPDS)

APPENDIX :1

FINANCIAL VIABILITY (R.P.D.S.) PER HECTARE
PATHANAMTHITTA DISTRICT

AMOUNT IN RS.

SL.NO.	PARTICULARS	YEARS										TOTAL		
		1	2	3	4	5	6	7	8	9	10		11	12 TO 25
1	COST	18528	8965	7697	5977	5043	4412	4412	5750	7250	8750	10250	10250	97284
2	BENEFIT								19173	21165	29880	34860	42330	147408
3	NET CASH FLOW	-18528	-8965	-7697	-5977	-5043	-4412	-4412	13423	13915	21130	24610	32080	50124
4	D.F. @ 15%	0.870	0.756	0.658	0.572	0.497	0.432	0.376	0.327	0.284	0.247	0.215	1.23	6.464
5	P.W. OF COST	16119.36	6777.54	5064.626	3418.844	2506.371	1905.984	1658.912						37451.64
6	P.W. OF BENEFIT								4389.321	3951.86	5219.11	5291.15	39458.4	58309.84

7 B.C. RATIO = $\frac{\text{PRESENT WORTH OF BENEFIT}}{\text{PRESENT WORTH OF COST}}$ = $\frac{58309.84}{37451.64}$ = 1.56

INDEX : DF@ 15% = DISCOUNT FACTOR AT 15%
P.W = PRESENT WORTH
B.C RATIO = BENEFIT - COST RATIO

APPENDIX : 2

FINANCIAL VIABILITY (R.P.D.S.) PER HECTARE
ERNAKULAM DISTRICT

SL.NO.	PARTICULARS	YEARS												TOTAL
		1	2	3	4	5	6	7	8	9	10	11	12 TO 25	
1	COST	18425	8915	7058	5943	5052	4420	4420	5600	7100	8600	10100	10100	95733
2	BENEFIT								19671	21912	31125	36105	43575	152388
3	NET CASH FLOW	-18425	-8915	-7058	-5943	-5052	-4420	-4420	14071	14812	22525	26005	33475	56655
4	D.F. @ 15%	0.870	0.756	0.658	0.572	0.497	0.432	0.376	0.327	0.284	0.247	0.215	1.23	6.464
5	P.W. OF COST	16029.75	6739.74	4644.164	3399.396	2510.844	1909.44	1661.92						36895.25
6	P.W. OF BENEFIT								4601.217	4206.608	5563.675	5591.075	41174.25	61136.83

7 B.C. RATIO $\frac{\text{PRESENT WORTH OF BENEFIT}}{\text{PRESENT WORTH OF COST}} = \frac{61136.83}{36895.25} = 1.66$

APPENDIX : 3

FINANCIAL VIABILITY (R.P.D.S.) PER HECTARE
PALAKKAD DISTRICT

SL.NO.	PARTICULARS	YEARS												TOTAL
		1	2	3	4	5	6	7	8	9	10	11	12 TO 25	
1	COST	18330	8869	7022	5913	5026	4398	4398	5950	7450	8950	10450	10450	97206
2	BENEFIT								19422	21787.5	29257.5	30502.5	43575.5	144545
3	NET CASH FLOW	-18330	-8869	-7022	-5913	-5026	-4398	-4398	13472	14337.5	20307.5	20052.5	33125.5	47339
4	D.F. @ 15%	0.870	0.756	0.658	0.572	0.497	0.432	0.376	0.327	0.284	0.247	0.215	1.23	6.464
5	P.W. OF COST	15947.1	6704.964	4620.476	3382.236	2497.922	1899.936	1653.648						36706.28
6	P.W. OF BENEFIT								4405.344	4071.85	5015.953	4311.288	40744.37	58548.8

7 B.C. RATIO $\frac{\text{PRESENT WORTH OF BENEFIT}}{\text{PRESENT WORTH OF COST}} = \frac{58548.80}{36706.28} = 1.60$

A PPENDIX : II B - FINANCIAL VIABILITY ANALYSIS (M I)

**FARM MODEL : ECONOMICS OF A NEW WELL ON 1 HECTARE OF HOLDING
- FINANCIAL VIABILITY
PATHANAMTHITTA DISTRICT**

APPENDIX : 4

SL.NO.	PARTICULARS	YEARS										TOTAL		
		1	2	3 TO 9	10	11 TO 19	20	21 TO 29	30					
1	COST	12125			2906		2906				2906		2906	20843
2	BENEFIT		1620	3240	3240	3240	3240	3240	3240	3240	3240	3240	3240	21060
3	NET CASH FLOW	-12125	1620	3240	334	3240	334	3240	3240	334	3240	3240	334	217
4	D.F. @ 15%	0.87	0.756	3.146	0.247	1.179	0.061	0.29					0.015	6.564
5	P.W. OF COST	10548.75												10548.75
6	P.W. OF BENEFIT		1224.72	10193.04	82.498	3819.96	20.374	939.6				5.01		16285.2

$$7 \quad \text{B.C. RATIO} \quad \frac{\text{PRESENT WORTH OF BENEFIT}}{\text{PRESENT WORTH OF COST}} = \frac{16285.20}{10548.75} = 1.54$$

INDEX : DF@ 15% = DISCOUNT FACTOR AT 15%
P.W = PRESENT WORTH
B.C RATIO = BENEFIT - COST RATIO

APPENDIX : 5.

FARM MODEL : ECONOMICS OF A NEW WELL ON 1 HECTARE OF HOLDING
- FINANCIAL VIABILITY
ERNAKULAM DISTRICT

SL.NO.	PARTICULARS	YEARS									TOTAL
		1	2	3 TO 9	10	11 TO 19	20	21 TO 29	30		
1	COST	14800			2960		2960			2960	23680
2	BENEFIT		1813	3626	3626	3626	3626	3626		3626	23569
3	NET CASH FLOW	-14800	1813	3626	666	3626	666	3626		666	-111
4	D.F. @ 15%	0.87	0.756	3.146	0.247	1.179	0.061	0.29		0.015	6.564
5	P.W. OF COST	12876									12876.00
6	P.W. OF BENEFIT		1370.628	11407.4	164.502	4275.054	40.626	1051.54		9.99	18319.74

7 B.C. RATIO $\frac{\text{PRESENT WORTH OF BENEFIT}}{\text{PRESENT WORTH OF COST}} = \frac{18319.74}{12876.00} = 1.42$

APPENDIX : 6

FARM MODEL : ECONOMICS OF A NEW WELL ON 1 HECTARE OF HOLDING
- FINANCIAL VIABILITY
PALAKKAD DISTRICT

SL.NO.	PARTICULARS	YEARS									TOTAL
		1	2	3 TO 9	10	11 TO 19	20	21 TO 29	30		
1	COST	11350			2170		2170			2170	17860
2	BENEFIT		1524	3048	3048	3048	3048	3048		3048	19812
3	NET CASH FLOW	-11350	1524	3048	878	3048	878	3048		878	1952
4	D.F. @ 15%	0.87	0.756	3.146	0.247	1.179	0.061	0.29		0.015	6.564
5	P.W. OF COST	9874.5									9874.50
6	P.W. OF BENEFIT		1152.144	9589.008	216.866	3593.592	53.558	883.92		13.17	15502.26

7 B.C. RATIO $\frac{\text{PRESENT WORTH OF BENEFIT}}{\text{PRESENT WORTH OF COST}} = \frac{15502.26}{9874.50} = 1.57$

APPENDIX : 7

FARM MODEL : ECONOMICS OF A PUMP SET ON 1 HECTARE OF HOLDING
 - FINANCIAL VIABILITY
PATHANAMTHITTA DISTRICT

SL.NO.	PARTICULARS	YEARS										TOTAL		
		1	2	3 TO 4	5	6 TO 9	10	11 TO 14	15					
1	COST	9500			425		850							10775
2	BENEFIT		1103	2206	2206	2206	2206	2206	2206	2206	2206	2206	2206	14339
3	SALVAGE VALUE												850	850
4	NET CASH FLOW	-9500	1103	2206	1781	2206	1356	2206	2206	3056	4414			4414
5	D.F. @ 15%	0.870	0.756	1.229	0.497	1.420	0.247	0.705	0.705	0.123	5.847			5.847
6	P.W. OF COST	8265												8265.00
7	P.W. OF BENEFIT		833.868	2711.174	885.157	3132.52	334.932	1555.23	375.888					9828.769

8 B.C. RATIO

PRESENT WORTH OF BENEFIT =

9828.77 =

PRESENT WORTH OF COST

8265.00

1.19

APPENDIX : 8

FARM MODEL : ECONOMICS OF A PUMP SET ON 1 HECTARE OF HOLDING
 - FINANCIAL VIABILITY
ERNAKULAM DISTRICT

SL.NO.	PARTICULARS	YEARS										TOTAL		
		1	2	3 TO 4	5	6 TO 9	10	11 TO 14	15					
1	COST	9250			400		825							10475
2	BENEFIT		1867	2667.14	2667.14	2667.14	2667.14	2667.14	2667.14	2667.14	2667.14	2667.14	2667.14	17869.84
3	SALVAGE VALUE												825	825
4	NET CASH FLOW	-9250	1867	2667.14	2267.14	2667.14	1842.14	2667.14	2667.14	3492.14	8219.84			8219.84
5	D.F. @ 15%	0.870	0.756	1.229	0.497	1.420	0.247	0.705	0.705	0.123	5.847			5.847
6	P.W. OF COST	8047.5												8047.50
7	P.W. OF BENEFIT		1411.452	3277.915	1126.769	3787.339	455.0086	1880.334	429.5332					12368.35

8 B.C. RATIO

PRESENT WORTH OF BENEFIT =

12368.35 =

PRESENT WORTH OF COST

8047.50

1.54

APPENDIX : 9

FARM MODEL : ECONOMICS OF A PUMP SET ON 1 HECTARE OF HOLDING
- FINANCIAL VIABILITY
PALAKKAD DISTRICT

AMOUNT IN RS.

SL.NO.	PARTICULARS	YEARS													TOTAL		
		1	2	3 TO 4	5	6 TO 9	10	11 TO 14	15	16 TO 19	20	21 TO 24	25	26 TO 29			
1	COST	9900			450		890										11240
2	BENEFIT		1979	2827.14	2827.14	2827.14	2827.14	2827.14	2827.14	2827.14	2827.14	2827.14	2827.14	2827.14	2827.14	2827.14	18941.84
3	SALVAGE VALUE														890		890
4	NET CASH FLOW	-9900	1979	2827.14	2377.14	2827.14	1937.14	2827.14	2827.14	2827.14	2827.14	2827.14	2827.14	2827.14	2827.14	2827.14	8591.84
5	D.F. @ 15%	0.870	0.756	1.229	0.497	1.420	0.247	0.705	0.123								5.847
6	P.W. OF COST	8613															8613.00
7	P.W. OF BENEFIT		1496.124	3474.555	1181.439	4014.539	478.4736	1993.134	457.2082								13095.47

8 B.C. RATIO $\frac{\text{PRESENT WORTH OF BENEFIT}}{\text{PRESENT WORTH OF COST}} = \frac{13095.47}{8613.00} = 1.52$

APPENDIX : 10

FARM MODEL : ECONOMICS OF A NEW WELL WITH PUMP SET ON 1 HECTARE OF HOLDING
- FINANCIAL VIABILITY
PATHANAMTHITTA DISTRICT

AMOUNT IN RS.

SL.NO.	PARTICULARS	YEARS													TOTAL		
		1	2	3 TO 4	5	6 TO 9	10	11 TO 14	15	16 TO 19	20	21 TO 24	25	26 TO 29			
1	COST	20600			400	3210	8040										35862
2	BENEFIT		2752	5504	5504	5504	5504	5504	5504	5504	5504	5504	5504	5504	5504	5504	63296
3	SALVAGE VALUE														800		800
4	NET CASH FLOW	-20600	2752	5504	5104	2294	5504	-1736	5504	5504	2692	5504	4704	5504	5504	5504	28234
5	D.F. @ 15%	0.870	0.756	1.229	0.497	1.420	0.247	0.123	0.351	0.061	0.175	0.030	0.087				6.551
6	P.W. OF COST	17922															18812.52
7	P.W. OF BENEFIT		2080.51	6764.42	2536.69	7815.68	566.62	3880.32	676.99	1931.90	164.21	963.20	165.12	478.85			28024.51

8 B.C. RATIO $\frac{\text{PRESENT WORTH OF BENEFIT}}{\text{PRESENT WORTH OF COST}} = \frac{28024.51}{18812.52} = 1.49$

APPENDIX :11

FARM MODEL : ECONOMICS OF A NEW WELL WITH PUMP SET ON 1 HECTARE OF HOLDING
 - FINANCIAL VIABILITY
ERNAKULAM DISTRICT

AMOUNT IN RS.

SL.NO.	PARTICULARS	YEARS												TOTAL					
		1	2	3 TO 4	5	6 TO 9	10	11 TO 14	15	16 TO 19	20	21 TO 24	25		26 TO 29				
1	COST	23300			456		2736		9100		2736		912		2736		912		39240
2	BENEFIT		2847	5694	5694	5694	5694	5694	5694	5694	5694	5694	5694	5694	5694	5694	5694	5694	65481
3	SALVAGE VALUE								900				912				912		900
4	NET CASH FLOW	-23300	2847	5694	5238	5694	2958	5694	-2506	5694	2958	5694	4782	5694	2958	5694	4782	5694	27141
5	D.F. @ 15%	0.870	0.756	1.229	0.497	1.420	0.247	0.705	0.123	0.351	0.061	0.175	0.030	0.087	0.061	0.175	0.030	0.087	6.551
6	P.W. OF COST	20271							1008.6										21279.6
7	P.W. OF BENEFIT		2152.33	6997.93	2603.29	8085.48	730.63	4014.27	700.36	1998.59	180.44	996.45	170.82	495.38	180.44	996.45	170.82	495.38	29125.96

8 B.C. RATIO

PRESENT WORTH OF BENEFIT = 29125.96 =

PRESENT WORTH OF COST = 21279.60

1.37

APPENDIX :12

FARM MODEL : ECONOMICS OF A NEW WELL WITH PUMP SET ON 1 HECTARE OF HOLDING
 - FINANCIAL VIABILITY
PALAKKAD DISTRICT

AMOUNT IN RS.

SL.NO.	PARTICULARS	YEARS												TOTAL					
		1	2	3 TO 4	5	6 TO 9	10	11 TO 14	15	16 TO 19	20	21 TO 24	25		26 TO 29				
1	COST	20250			395		3160		7900		2765		790		2765		790		35260
2	BENEFIT		2738	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	5476	62974
3	SALVAGE VALUE								790				790				790		790
4	NET CASH FLOW	-20250	2738	5476	5081	5476	2316	5476	-1634	5476	2711	5476	4686	5476	2711	5476	4686	5476	28504
5	D.F. @ 15%	0.870	0.756	1.229	0.497	1.420	0.247	0.705	0.123	0.351	0.061	0.175	0.030	0.087	0.061	0.175	0.030	0.087	6.551
6	P.W. OF COST	17617.5							874.53										18492.03
7	P.W. OF BENEFIT		2069.93	6730.00	2525.26	7775.92	572.05	3860.58	673.55	1922.08	165.37	958.30	164.28	476.41	165.37	958.30	164.28	476.41	27893.73

8 B.C. RATIO

PRESENT WORTH OF BENEFIT = 27893.73 =

PRESENT WORTH OF COST = 18492.03

1.51

[REDACTED]

[REDACTED]

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