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'RYOTS' REWARD: A STUDY OF PRODUCTION CREDIT REPAYMENT PROBLEMS OF SMALL FARMERS IN MYSORE STATE, INDIA

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RYOTS' REWARD: A STUDY OF PRODUCTION CREDIT REPAYMENT PROBLEMS OF SMALL FARMERS IN MYSORE STATE, INDIA

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To the Graduate Council:

I am submitting herewith a dissertation written by Glenn Clifford Webster Ames entitled "Ryots' Reward: A Study of Production Credit Repayment Problems of Small Farmers in Mysore State, India." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Agricultural Economics.

_____
Major Professor

We have read this dissertation
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Vice Chancellor for
Graduate Studies and Research

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RYOTS' REWARD: A STUDY OF PRODUCTION CREDIT REPAYMENT PROBLEMS OF SMALL FARMERS IN MYSORE STATE, INDIA

A Dissertation

Presented to

the Graduate Council of

The University of Tennessee

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

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by

Glenn Clifford Webster Ames

June 1973

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ABSTRACT

India, and Mysore State in particular, is an example of a developing economy which needs to rationalize its agricultural credit cooperatives. The central objective of this study was to examine the relationship between the repayment of crop production credit and various characteristics of the sample farms and cooperative societies, as well as lending policies and administrative procedures of the district cooperative central banks in selected areas of Mysore State.

Cross-sectional data for a sample of 136 farmer-member-borrowers of 35 primary agricultural credit cooperative societies in Bangalore, Mandya, and Mysore Districts of Mysore State, India, were obtained through interviews with the farmers between May and July, 1972. The sample represented less than 1 percent of the members of all agricultural credit cooperatives in Mysore State. The specific components of the analysis were: 1) to describe the organization of Indian agricultural credit cooperatives as it affects their operational efficiency; 2) to identify existing cooperative lending practices and their difficulties in dealing with borrowers; 3) to examine the sources of difficulty borrowers encountered in repaying crop production loans and other credit sources; and 4) to suggest feasible ways to alleviate repayment problems.

Observations from the sample farmer-borrowers and cooperative societies were classified according to farm size and on the basis of their repayment of 1970-71 crop crop production loans. Averages of farmer resources, cropping patterns, borrowing practices, and problems

were compared by farm size for defaulters and non-defaulters. Least squares multiple regression was used to examine the factors associated with the farmers' total amount of outstanding credit, the amount of crop production credit overdue, and socio-economic problems associated with the repayment of cooperative credit.

The results indicated that among all farmers, defaulters and fewer assets in land, livestock, equipment, and grain stocks than non-defaulters. Defaulters had larger average currently financed capital investments than did non-defaulters. The combination of financial obligations to repay other sources of credit and crop production loans was greater than their limited earnings could support. Also, defaulters had, on the average, a lower net output per acre for all crops, less farm income, and owned fewer irrigated acres than non-defaulters.

The analysis of the Mysore farmers' total debt structure demonstrated that some Indian farmers do borrow for unproductive purposes on such occasions as marriage, deaths, births, and litigation. Such spending was a major cause of their heavy indebtedness. However, there was no indication that farmers went into debt to finance annual festival expenditures.

The repayment capacity of the farmer-borrowers was very irregular. Droughts, floods, pests, and a host of other natural calamities resulting in crop failures were primary reasons given by members of cooperative societies for defaulting on their crop production loans. However, supervisors of the cooperative banks tended to disregard the farmers' explanations for their overdue situations and emphasized what they believed to be evidence of willful default by their clients.

The repayment of agricultural credit from cooperative societies can be measurably improved if careful attention is given to selected pivotal issues--loan supervision, marketing and credit, share capital requirements, and educational activities. Also, the land tenure system, the type of agricultural production, and the society's socio-economic objectives are very important environmental factors which influence the success or failure of cooperative credit systems.

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CHAPTER I

INTRODUCTION

In recent years, the problems of providing adequate credit services to farmers have assumed special significance with the adoption of economic development programs and with the spread of the Green Revolution. Agricultural cooperatives are promoted as the panacea for both the farmers and development programs. In many cases, agricultural cooperatives are asked to perform Herculean tasks without revitalizing their weak structures.

In many developing countries of Asia, agricultural cooperatives have been functioning since the beginning of this century. Their major task and often only activity has been the provision of credit. Their scope has been limited to small villages and a fraction of their population. In 1969, Indian agricultural cooperatives covered approximately 35 percent of the rural families (both cultivators and others), and only about 38 percent of their members actually borrowed from them.[1] In addition, cooperatives seldom cover all the farmers' credit needs. Generally, institutional agricultural credit, which includes cooperative credit, covers less than one-third of any given farmer's credit needs and often even less than one-fifth. Consequently, farmers still turn to their time-honored, non-institutional sources of credit--moneylenders, merchants, landlords, relatives, and friends.

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[1]Reserve Bank of India, Statistical Statements Relating to the Cooperative Movement in India, n.p., Reserve Bank of India, 1968-69, quoted in Mohinder Singh, "Challenge of Agricultural Cooperative Financing," Modern Government, XIII, No. 6 (August, 1972), p. 39.

India, and Mysore State in particular, is an example of a developing economy which needs to rationalize its agricultural credit cooperative structure. According to the All-India Rural Debt and Investment Survey, approximately 11.6 percent of the cultivator households in Mysore State reported borrowings from cooperatives during 1960-61, and this credit formed 20.6 percent of the total borrowings of all farmers, as against 15.5 percent for All-India. Other indicators of problems with the cooperative movement in Mysore State include the alarming financial position of various district cooperative central banks and the weak repayment position of primary agricultural credit cooperatives at the village level. The District Cooperative Central Banks in Bangalore, Mandya, and Raichur had outstanding loans ranging between 44 and 62 percent of repayment obligations from 1967-68.[2] The overdue position at the primary cooperative level for Mysore State stood at over 40 percent in relation to outstanding loans at the end of 1966-67 and 1967-68.[3]

In 1960-62 the Intensive Agricultural District Programme (IADP) was introduced in 16 selected districts spread over 15 states. The main objective of IADP was to promote the adoption by cultivators of a "package of improved practices," such as improved varieties of crops, fertilizers, pesticides, and better soil and water management accompanied by a "package of services" to the cultivators including credit, supplies of inputs, and technical guidance. The districts were selected

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[2]Report of the All-India Rural Credit Review Committee, B. Venkatappiah, chairman (Bombay: Reserve Bank of India, 1969), p. 255.

[3]Report, p. 255.

on the basis of their irrigation facilities, cooperatives, and panchayats[4] since these resources represented a potential for increasing agricultural production.

The IDAP was introduced in Mandya District of Mysore State in 1962. With the program came an increase in the need for agricultural credit from the cooperative societies. Poor supervision, inadequate linking of credit with marketing, willful default, and party factions adversely affected the program's progress.[5] After a decade of slow improvement, the cooperative movement in Mandya District became one of the best in the state. In the rest of Mysore State, the cooperative movement remained stagnant and in need of revitalization. "To some extent, this reflects the weakness of the farm economy itself . . . [which] depends mainly on uncertain rains and is based on the relatively less remunerative food crops."[6]

The Small Farmers Development Agency (SFDA), which was introduced in four states, Andhra Pradesh, Mysore, Tamil Nadu, and Kerala, in 1969-70 as an integral part of the Fourth Five Year Plan, focuses on the special problems of small farmers. "The principal function of the agency . . . [was] to identify the problems of the small but potentially viable farmers in the area and help ensure the availability of inputs,

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[4]The panchayat is the basic local governmental unit which may represent one or more villages. It is an elected body that includes a chairman, eight to ten members from wards within the panchayat, and three or four members to represent women, scheduled castes and tribes.

[5]Report, p. 256.

[6]Report, p. 257.

services, and credit."[7] The SFDA planned to identify eligible small farmers, investigate their problems, and implement possible solutions undertaking these activities through existing agencies and authorities as far as possible. The major functions were to aid the small farmers in securing services and supplies and to obtain credit from the cooperative banks through village societies or from land development banks in the case of long-term loans. The Agency has encouraged small farmers in four districts of Mysore State including Bangalore and Mysore districts where parts of this study were conducted to obtain medium-term loans from the cooperative societies for dairy projects, poultry farming, "piggery" development, and sheep breeding by subsidizing the cost of materials and credit. These activities have increased the need for agricultural credit and a strong cooperative organization.

The cooperative movement throughout Mysore State continues to be plagued with tremendous problems, even in prosperous and progressive areas like Mandya District. Cooperative credit continues to ignore the needs of small cultivators while large cultivators dominate the cooperative societies for their own benefit. A major obstacle for cooperatives and cultivators alike is their poor repayment performance. Unfavorable crop conditions remain as one of the major reasons for the cultivators' inability to repay crop production loans, and therefore weaken the entire cooperative structure. All of these obstacles hinder the efforts of the Cooperation Department to improve the societies.

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[7] Government of India, Planning Commission, Fourth Five Year Plan, 1969-74, Draft (New Delhi: Manager of Publications, Government of India, 1969), p. 116.

I. THE PROBLEM

Cooperative credit in Mysore State presents a picture of uneven development. In a few districts, the cooperative credit structure is fairly strong in terms of resources and operational efficiency.[8] Other districts are inefficient and plagued with a malady of operational and resource problems. Even within districts where cooperatives are supplying cultivators credit on a regular basis and recovering their loans with interest, the operation of individual cooperative societies varies greatly. For example, Mandya District of Mysore State is generally considered a progressive and prosperous district in terms of resources in the cooperative sector and operational efficiency of the societies. Nevertheless, many cooperative societies within the district are nearly defunct due to the heavy amount of overdue loans and the resultant ineligibil..ty of many of the societies and members to obtain additional financing. Difficulties with the crop loan system are the major problem.[9]

[8]In this study, operational efficiency of cooperative societies is measured by the percentage of its short-term credit repaid which is consistent with the Mysore State District Cooperative Central Banks' concept of cooperative efficiency. For example, a society with only 75 percent of its loans repaid would be considered more efficient than one with 50 percent of its loan overdue. Other measures of efficiency, which are also relevant, are the timely availability of credit, the percentage of crop production loans going to small farmers, and the increase in agricultural production attributed to inputs from cooperative societies.

[9]The observations in this chapter and throughout the study on the Mysore State cooperative agricultural credit structure were based on an extensive review of the literature on agricultural credit available at the University of Tennessee, the Land Tenure Center at the University of Wisconsin, and the Capital Formation Project at the Ohio State University. In addition, interviews with G. V. K. Rao, Development Commissioner, Government of Mysore; A. Shanker Alva, Minister for Cooperation, Government of Mysore; G. K. Sangameswar, Deputy Registrar of

Primary agricultural credit cooperatives generally provide two types of loans, short-term crop production loans and medium-term loans. Crop production loans are nothing but short-term loans issued for the purpose of seasonal agricultural operations on the security of the standing crops of the farmer. If the cultivator has a successful crop year, he is expected to repay his loan plus interest. On the other hand, if the cultivator is unable to repay his crop production loan, he may have the loan converted to a medium-term loan if the circumstances warrant. If a large number of farmer-member-borrowers default on their crop production loans, the cultivators and their cooperative society become ineligible for fresh crop production finance. Under these circumstances, agricultural credit cooperatives cannot contribute effectively to agricultural development.

The problem of overdue crop production loans can be approached in numerous ways. One approach is to study the characteristics of those cooperative societies and farmer-member-borrowers with poor repayment records and compare them with those with good records so that recommendations can be made for improving the weaker societies.

Indian authorities assert that large farmers dominate the cooperative societies and reap the benefits. Others contend that politics and factionalism are destroying the cooperative movement at the village, district and state level. Cultivators are accused of willfully defaulting on their financial obligations and using their loans for consumptive

Cooperative Societies, Bangalore District; and K. Raja Rao and K. Ankegowda, Project Officers, Small Farmers Development Agency, substantiated the author's impressions gathered from the literature review.

purposes. Few, if any, authorities have carefully assessed the effectiveness of short-term credit use. In addition, overdues reflect the impact of unsound lending practices and the lack of supervision over primary credit societies.

Supervision over the primary credit societies may be broadly classified in two categories: financial and administrative. Though some of these functions overlap, financial supervision would include functions such as insuring that loans drawn by cooperatives are within their maximum credit limits, assisting the society's staff in the preparation of loan applications, examining accounting records, and collecting loan repayments. In Mysore State, these functions belong to the district cooperative central banks. The main administrative functions, which are allocated to the Cooperation Department within the state government, are to see that the society operates in conformity with cooperative principles and its by-laws, that the departmental recommendations are carried out, and to investigate complaints against the societies and their members.

II. OBJECTIVES

The overall objective of this study was to document the nature and causes of farmer-member-borrowers' difficulties in repaying short-term crop production loans from Mysore cooperative societies with a view toward identifying feasible programs that public agencies can implement to alleviate these problems in Mysore State. Specific components of the analysis include:

1. Descriptive overview of the institutional sources of agricultural credit in Mysore State, with special attention to the cooperative societies providing short-term loans.
2. Identification of existing cooperative lending practices, their difficulties in dealing with farmer-member-borrowers, and their ideas about reducing repayment problems.
3. Examination of selected farming situations in both dryland and irrigated areas, ascertaining credit sources used (specifically institutional credit), the repayment of credit, and the sources of difficulty encountered in repaying loans.
4. Suggestion of feasible ways to alleviate repayment problems, drawing on empirical evidence about the effectiveness of credit use.

Throughout the literature on the use of institutional credit in India, certain common themes continually reappear and they, in turn, suggest several hypotheses that merit investigation within the scope of the study's objectives:

1. Some farms are too limited in resources to effectively use crop production credit. This is a major factor in loan overdues.
2. Lending agencies do not adequately supervise loans, nor do they have an organization capable of decision-making on borrowers' credit-worthiness.
3. Natural calamities and seasonal fluctuations are major reasons

for defaulting on loans. Repayment schedules are overly tied to the annual cropping cycle.

4. The Indian peasant incurs heavy debt for "unproductive" purposes on such occasions as marriages, deaths, and festivals. Accordingly, such spending is a major cause of heavy indebtedness and the underutilizaiton of credit.
5. Indian farmers are indifferent to repayment responsibilities since they do not receive incentives for prompt and early repayment. In addition, farmers who default on their loans assume that lending agencies will not seek legal action against them to recover the loans.

Within the bounds of the resources and facilities available for this study, it was not possible to seek to test each of these hypotheses conclusively. But the information that was obtained in Mysore State during the spring of 1972 did provide new insight about their validity, as brought out in various sections in this dissertation.

III. HOW THE STUDY WAS CONDUCTED

The author formulated tentative plans for the Mysore survey component of this study at the University of Tennessee. Subsequently, the staff in the Department of Agricultural Economics at the Mysore University of Agricultural Sciences (MUAS), Bangalore, India, suggested minor changes. The Department Head at MUAS proposed Mysore and Mandya Districts of southern Mysore State as the area for study since he considered these districts to be average and above average respectively in efficient cooperative credit operation. On the basis of various

informational sources, Bangalore District was selected as an example of poor credit cooperative management. A Master's student in agricultural economics at MUAS, Mr. B. T. Munikrishnappa, accompanied the author on the field survey and served as guide and interpreter. Munikrishnappa collected data for his own use on the credit needs of small farmers.

The data were collected from farmer-member-borrowers and paid secretaries of the sample cooperative societies by direct interviews using a different questionnaire for each group. The author collected information on five broad categories: 1) farmer's resources, 2) consumption, 3) indebtedness, 4) income, and 5) cropping pattern. Paid secretaries provided data on the financial status of the village level cooperative.

Cooperative officials in Mysore State also provided substantial data through numerous interviews and reports. These officials gave valuable insights into the administration of crop production credit at the state, district, and village levels. Cooperative officials were very helpful in general and gave useful interviews. Only in a few cases did the officials present a favorable picture of the cooperatives' activities while disguising the unpleasant aspects of their work. In any case, a study of this nature would have been impossible to conduct without their approval and assistance.

As many authorities contend, politicians and special interest groups had a strong influence upon the operating efficiency of the cooperative credit institution. Cooperative officials alluded to the influence of politicians upon the operations of the district cooperative central banks and their personnel as well as upon the village level

cooperatives. However, the author was unable to obtain more than a superficial knowledge of political influence in the cooperative movement in the short period of his stay in India.

The district cooperative central banks and the deputy registrars of cooperative societies were headquartered in the major cities of the three selected districts. They provided logistical support and aided in the selection of the cooperative societies surveyed for this study. The sample societies represented a purposely selected cross-section of primary agricultural credit cooperatives in each district. Some societies were operating efficiently, while others were not. Some societies were easily accessible by paved roads and others were located in the interior on rough dirt roads. Interviews with the paid secretaries and farmer-member-borrowers of the societies took place during May, June, and July of 1972. A map of the areas surveyed is presented in Figure 1. In general, the sample societies represented a good spectrum of primary agricultural credit societies in each district.

The production credit questionnaire used in the survey of primary agricultural credit cooperatives is found in Appendix B. Problems were encountered in using this questionnaire. The author interviewed the paid secretaries of the cooperative societies through the student interpreter, or directly, if they knew English sufficiently to understand his questions. All interviews took place in the presence of a representative of the Deputy Registrar of Cooperative Societies' office, since they had notified the paid secretaries of the time and purpose of the interview. Frequently, cooperative extension officers conducted some minor business with the paid secretaries after the interviews were

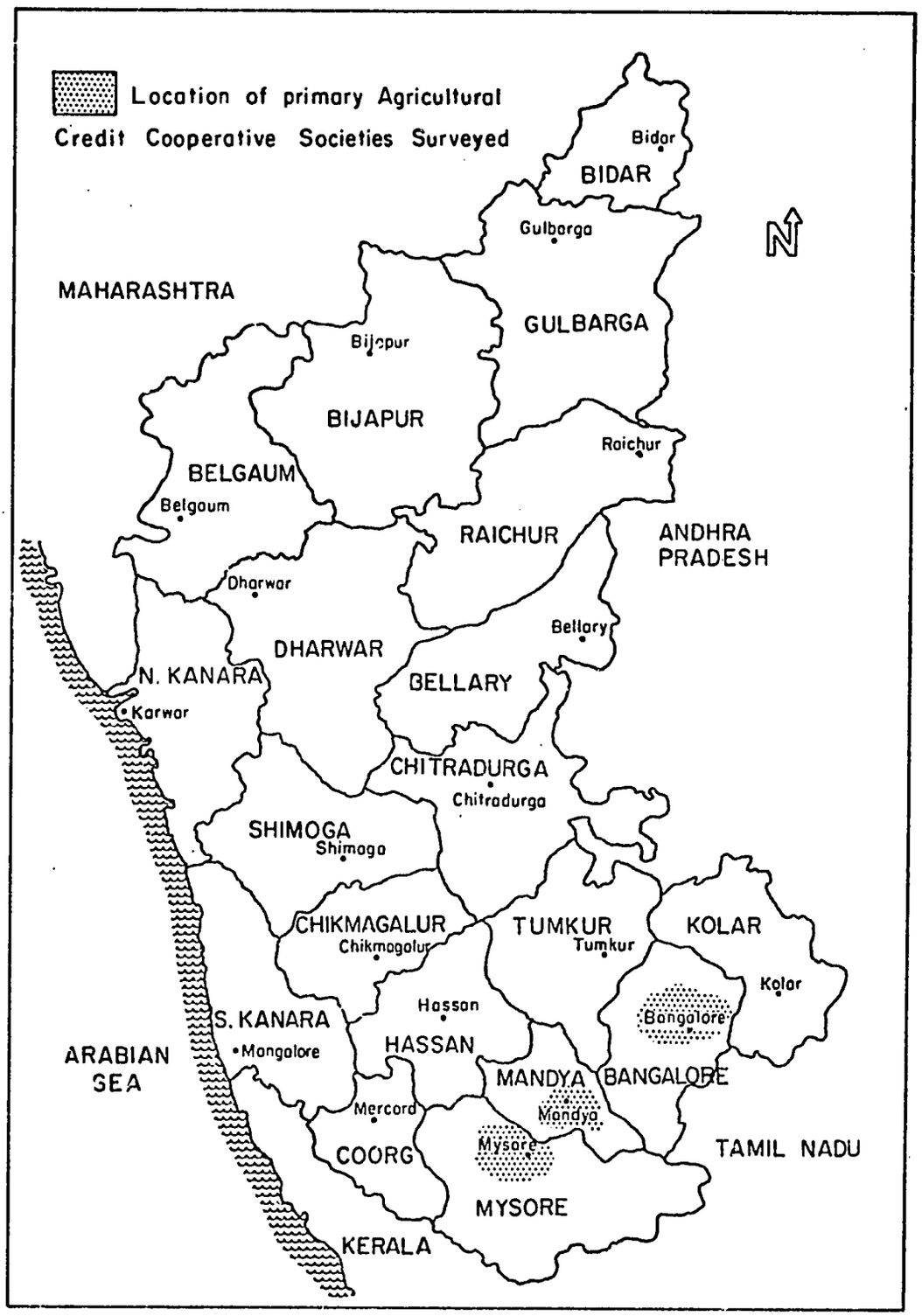

Figure 1. Mysore State Map

concluded. Much of the data came directly from the cooperative's record books maintained by the paid secretary. A few questions required the paid secretary's opinion and this information was impossible to obtain. Since the secretary's superior from either the district bank or Registrar's office was present, he was reluctant to express himself on aspects of the cooperative's administration. Also, the secretaries lacked the knowledge to respond to questions about the central cooperative administration, which was determined at the district, state, or national level. Nevertheless, the paid secretaries were the farmers' and financing agency's contact at the village level and hence, their abilities, to a large extent, determined the success or failure of the cooperatives' administration.

The production credit questionnaire used in the survey of farmer-member-borrowers of the cooperative societies proved to be very manageable in the field. When interpreters were required, as they were in over 80 percent of the cases, farmers were interviewed in about 30 minutes. If the farmers understood English, the author interviewed them directly in a little less time. Only a few farmers demonstrated reluctance to answer questions since the Cooperation Department had made arrangements for the interviews and explained the purpose of the author's visit. An important aspect of this questionnaire was its cross-checks against inconsistent responses in the area of credit sources and usage. This became very important when farmers were asked about borrowing from non-institutional sources. In general, these checks maintained the internal consistency of the responses during the interviews and provided for a reliable data collection process.

IV. EXPLANATION OF TERMS

Two terms used throughout the study need to be defined succinctly: 1) crop production loans and 2) "small" versus "large" farmers.

Crop Production Loan

The crop production loan[10] is nothing more than short-term credit issued by primary agricultural credit cooperatives to their members for the purpose of financing seasonal agricultural operations. Any person who cultivates the land, irrespective of ownership, is eligible to obtain credit from cooperatives if he is a member of the local society. The cultivator's credit needs are assessed by preparing a "normal credit statement" which contains particulars relating to the number of acres cultivated and the crops grown. The amount of credit available for each crop is fixed according to the "scale of finance." A conference of field workers composed of prominent farmers, cooperative officials, and technical experts from the agricultural department determines the scale of finance.

Crop loans are divided into "A" and "B" components. The "A" component consists of cash and the "B," or kind component, generally consists of chemical fertilizer. The scale of finance fixes the ratio of "A" and "B" components. The scale of finance, and hence the crop loan, varies from crop to crop and area to area. Small and large farmers receive the same amount of credit per acre per crop, but their total borrowings depend upon their cropping and acreage pattern.

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[10] B. S. Pillai, "Concept of the Crop Loan System," Cooperative Training College: Special Issue, VII (March, 1972), p. 98.

"Small" Versus "Large" Farmers

For this study, "small" farmers were defined as cultivators who owned a total of five acres of land or less. Farmers who owned only five acres of irrigated land were included in the same class as those farmers who owned only five acres of dry land or some combination of both which totaled five acres. In addition, marginal farmers were included as small farmers in order to increase the size of the sample. Tenants were not included in the sample.

The SFDA identified small farmers[11] on a different basis for each district. The SFDA identified small farmers on the basis of land-holdings from two and one-half to five acres of dry (rain fed) land and one acre to two and one-half acres of wet land (irrigated) in Bangalore and Mysore districts. Other districts in the SFDA scheme used similar identification criteria.

Large farmers, or big farmers as they are sometimes called, were identified as those cultivators who owned more than five acres. The farms in this category were, on the average, twice as large as the small farms and included cultivators who could be called medium size farmers; however, they were included as large farmers.

Other Terms

Other terms that need an explanation are talukas and "tank fed" irrigation. Mysore State is divided into districts which are about the

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[11] Regional Workshop of Small Farmers Development Agencies of the Southern States, June 10-12, 1971 (Mysore: Administrative Training Institute, 1971), pp. 20-54. If the SFDA's definition of small farmers had been used, several small-farmer-borrowers surveyed would have been excluded since they owned less than two and one-half acres of dry land and would have been classified as marginal farmers by the SFDA.

same as the county or parish in the United States. Districts are divided into talukas which perform about the same functions as townships.

"Tank fed" irrigation facilities are the most widely used water supply systems in the Deccan Plateau. Small dams are constructed across natural collection basins where the monsoon rains can be trapped and used for irrigation. Canals, located below the tanks or ponds, carry the water to the farmers' fields. Cultivators who have lands below the tanks are in an advantageous position relative to farmers who must depend upon dry farming.

CHAPTER II

INDIAN AGRICULTURAL CREDIT COOPERATIVES AND DEVELOPMENT POLICIES

The organization of Indian agricultural credit cooperatives as it affects the operational efficiency of the district cooperative central banks and village societies is the main focus of this chapter. Topics include a brief history of the Indian cooperative movement, the role of commercial banks in financing cooperatives, supervision of cooperatives, institutional procedures, and repayment problems. These subjects provide an introduction to the agricultural credit cooperative organization and particularly to the problems facing cooperatives in Mysore State. Moreover, this information develops a frame of reference for the discussion of the sample cooperatives and farmer-borrowers in subsequent chapters.

I. THE COOPERATIVE MOVEMENT IN INDIA

The cooperative movement in India, which began in the last decades of the 19th century, has passed through several phases of growth, stagnation, and development. Although this movement started for the purpose of granting short term loans to people of limited means, it now embodies all phases of economic activity.

In 1904, the first Co-operative Credit Societies Act was enacted in India and was later altered and amended by the Co-operative Societies Act of 1912. Under these laws, the government took the initiative for

the introduction of the cooperative movement, and it provided such services to the cooperatives as annual audits, inspections, and exemptions from income taxes, stamp fees, and registration fees. The spirit behind this activity was intended to create conditions under which the societies could function as autonomous bodies with as little interference as possible from the government. However, as the cooperative movement spread, the authorities took an active interest in the promotion and development of cooperative societies as an efficient instrument for promoting general welfare. In the post-Independence period, cooperatives became integral parts of the development plans.[1]

During the Great Depression of 1929-35, the cooperative movement stagnated and declined. Production outlets dried up, assets were frozen, and overdues mounted rapidly. Many cooperative financial institutions came near virtual extinction. Cooperatives recovered from the shock of the Thirties with the return of prosperity during the Second World War.[2]

In the post-Independence period, cooperatives became integral parts of the five-year development plans. In 1954, the Reserve Bank of India published its All-India Rural Credit Survey, which devised an elaborate plan for the reorganization and development of cooperatives.

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[1]J. C. Ryan, "Co-operatives in Asia: Recent Developments and Trends," International Labour Review, LXXXXII, No. 6 (December, 1965), pp. 462-464. Another excellent reference which supports Ryan's theme is Eleanor M. Hough, The Co-operative Movement in India (4th ed.; London: Oxford University Press, 1959).

[2]Kewel Krishan Dewett, Guru Charan Singh, and J. D. Verma, Indian Economics (22nd ed.; New Delhi: S. Chand & Co. Ltd., 1972), p. 304.

Essentially, the Reserve Bank suggested a business-like approach to peasant farming. The cooperatives financed the cultivators as producers of crops, not as owners of land. One result of the Reserve Bank's recommendations was the crop loan system.[3]

The Reserve Bank also recommended the integration of credit and marketing. This aspect of the cooperative has been more difficult to implement than the crop loan system. "The credit cooperative was to finance its members on the condition that the produce of the member is sold through the nearest marketing cooperative."[4] The scheme rested on the assumption that cooperative members produce crops primarily for sale; however, the main crops of India are food-grains, most of which are raised for home consumption. The system works best with growers of cash crops like sugar cane which require heavy investment and must be sold quickly after each harvest.

During the first three Five Year Plans beginning in the early 1950's, the cooperative movement has made substantial progress in extending its activities to all sectors of the economy. The number of societies has increased; the membership more than trebled; the share capital multiplied almost nine times, while the working capital has increased more than 10 times.[5]

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[3]Daniel Thorner, Agricultural Cooperatives in India: A Field Report (New York: Asia Publishing House, 1964), p. 15.

[4]Thorner, p. 15.

[5]Dewett, et al., p. 304.

During the current Fourth Five Year Plan, the cooperative movement has extended its activities to include people excluded from participating in their societies.

> In theory, current Indian cooperative policy is based on two organizing principles--1) universal membership of all families in a village and 2) crop loans linked to production and marketing. In particular, the poorer sections of the village community . . . are to be brought into the cooperative fold. The richer sections are asked to show a sense of concern for the weaker sections, especially by depositing their surplus cash with the cooperatives.[6]

This policy has not been as successful as many cooperators had anticipated. Universal village membership presupposes a little social equality and economic viability and these essential ingredients have been lacking at the village level. The government has taken steps to reverse the flow of economic and political power in the primary cooperative societies through two new agencies, the Small Farmers Development Agencies and the Marginal Farmers and Agricultural Labourers Agencies. These agencies were intended to build up the proper infrastructure so that adequate credit facilities are available to the weaker sections of the rural population. Whether they can overcome some stubborn realities of Indian village life depends upon the agencies' dedication to the weaker sections of society.

The Cooperative Credit Structure

Generally speaking, the cooperative movement has two main divisions in its structure--credit and non-credit operations. Each operation can, in turn, be divided into services to agricultural and non-agricultural

[6]Daniel Thorner, "The Weak and the Strong," Development Digest, VI, No. 1 (January, 1968), p. 49.

clientele. This study concentrates on a very small part of the agricultural credit structure. The structure of the overall cooperative movement is depicted in Figure 2.

The cooperative structure handles short and medium-term agricultural credit through a three tier organization. Long-term credit has a separate but similar organization. In every state, the short-term credit structure consists of the state cooperative bank at the apex, the district cooperative central banks, and primary agricultural credit cooperatives at the village level. The primary cooperative societies form the foundation of the whole structure.

The Reserve Bank of India grants loans at 2 percent below the Bank rate to the State Cooperative Apex Bank; the Apex Bank finances the District Cooperative Central Banks; they, in turn, make loans to the primary credit cooperatives at the village level. The primary cooperatives then finance the cultivator's seasonal agricultural operations through the crop loan system. Figure 3 indicates the flow of credit and services to the cultivator. One authority indicates that India has 22 State Cooperative Banks, 425 District Cooperative Central Banks, and 209,622 primary agricultural credit cooperative societies.[7]

The weakest links in the three tier structure are the primary credit societies. If the primary credit societies are expected to repay their loans to the district cooperative central banks, the cultivator-borrowers must repay their crop production loans and medium-term loans

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[7]M. Sulaiman Kunju, "Whether the Three Tier System Is To Be Continued," Co-operative Training College: Co-operative Management for the Seventies, VI (Special Number, 1970), p. 145.

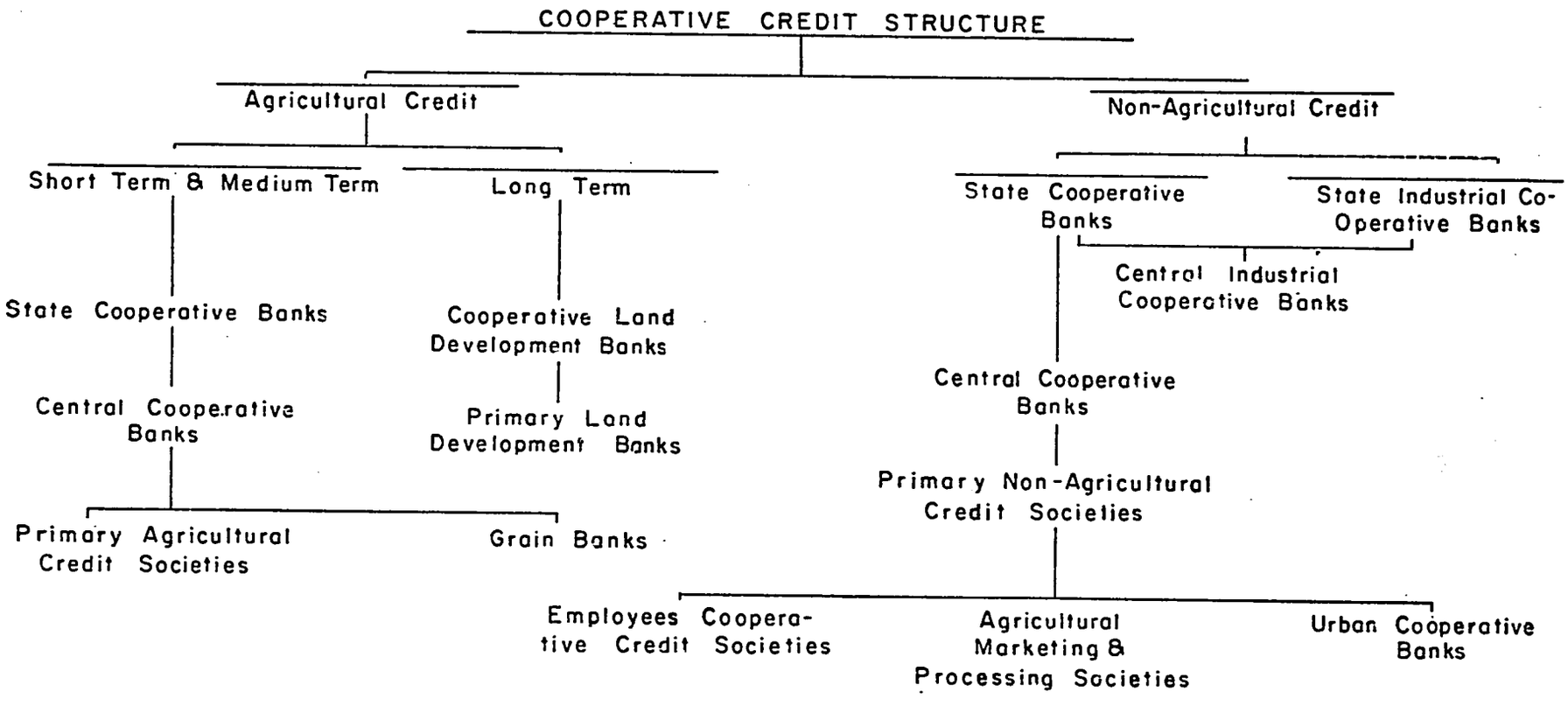

Figure 2. Cooperative Credit Structure in India.

Source: Report of a Study Group of the National Credit Council, Organizational Framework for the Implementation of Social Objectives (Bombay: Reserve Bank of India, 1969), p.12.

FLOW OF SERVICES AND INSTITUTIONAL FINANCE

PRIMARY CREDIT SOCIETIES

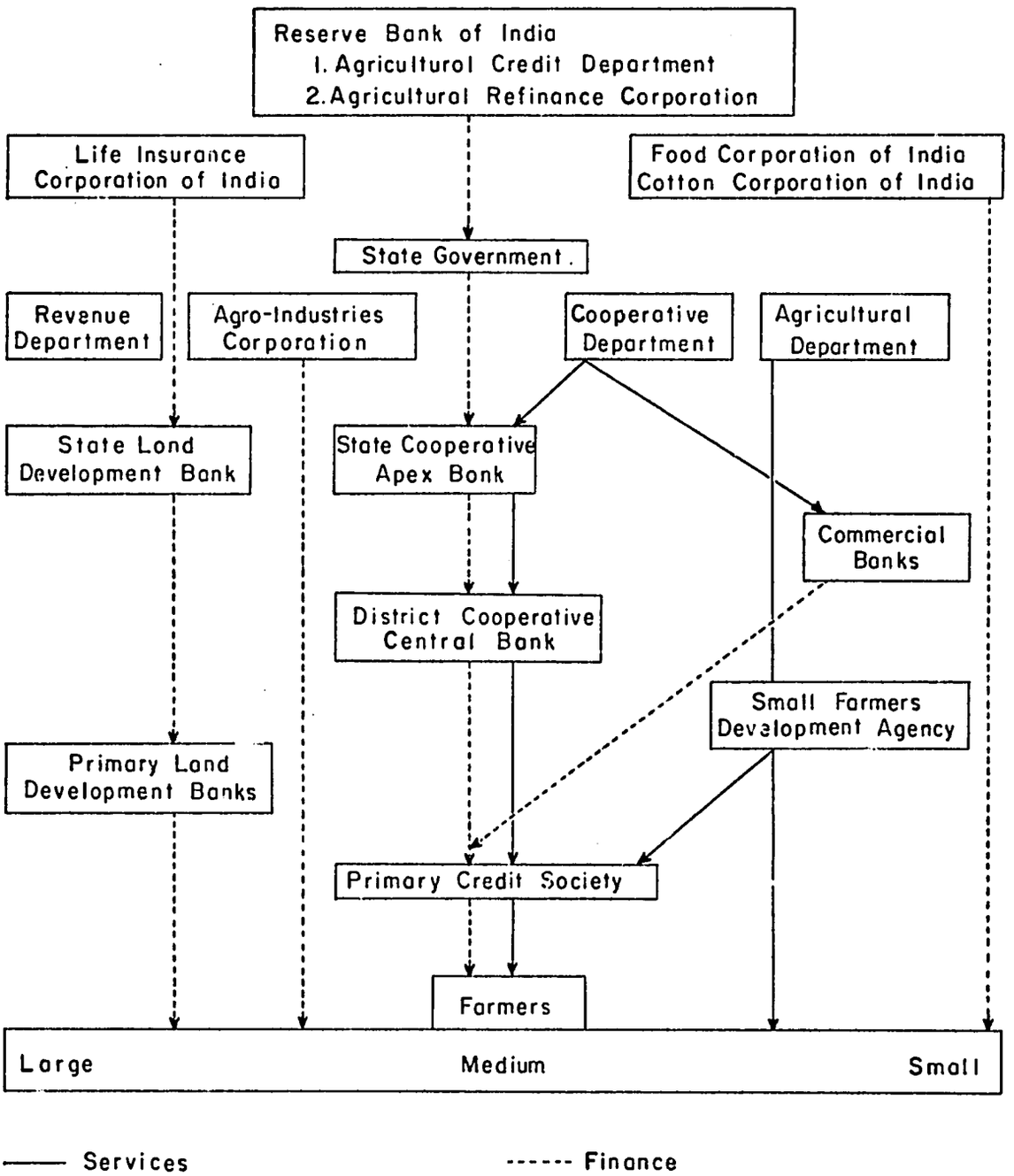

Figure 3. Cooperative Agricultural Credit Structure in India.

to the societies. Since the primary cooperative societies are not self-financing, they are ineligible for new finance from the district cooperative banks and unable to finance the cultivators if they default on their loans. If the primary societies are overdue to the district cooperative banks, these banks, in turn, cannot repay their loans to the state cooperative banks. As a result, the Reserve Bank of India heavily subsidizes the cooperative apex banks. The weak financial structure of the cooperative movement has been a major obstacle in mobilizing commercial bank credit for the agricultural sector.

II. ROLE OF COMMERCIAL BANKS IN FINANCING COOPERATIVES

The nationalization of 14 major commercial banks in India on August 9, 1969, was one of the most significant steps affecting economic development in the country since Independence (1947). This has provided a new avenue for increasing credit for agriculture on a selective basis. Ever since planning started in India, planners have argued that agriculture was the Achilles heel of the Indian economy. Very little money flowed into the agricultural sector from commercial banks, except in the case of plantations and large scale farming enterprises. Agricultural finance continues to be the anathema of urban bankers who have been reluctant to invest in less remunerative rural areas. Under government direction, commercial banks have been financing agriculture on a larger scale in the last three years with mixed success.

Under the new system, commercial banks have to a large extent channeled their loans to farmers through cooperative societies. Since

the commercial banks were assigned cooperatives that formerly had been financed entirely by district cooperative central banks, they now face the same problems of high overdues and defaulting farmers that stifled the district banks. However, the commercial banks are trying some promising new experiments in the field of agricultural credit.

In 1970, the scheme for financing primary agricultural credit by commercial banks was introduced in seven districts of Mysore State. The district cooperative central banks in these districts were administratively and financially weak and ill-equipped to meet the credit needs of farmers.[8] Commercial banks faced two important tasks--supplying crop production loans and medium-term credit to small farmers and revitalizing the cooperative societies.

Revitalizing the cooperative societies has been a major undertaking for the commercial banks. The district cooperative central banks usually allotted the commercial banks the poorest societies in terms of resources and operational efficiency. Because of heavy overdues, many cooperatives were not in a position to borrow from district cooperative central banks. In these circumstances, commercial banks were required to recover old debts as well as advance new loans. Consequently, many banks have been slow to take up the task of financing cultivators through cooperatives. However, the Syndicate Bank has been a leader in this field and its experiences in Mysore District are typical of the problems faced by all commercial banks.

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[8]Syndicate Bank, Proceedings of the Seminar on "Financing of Primary Agricultural Credit Societies by Commercial Banks" held at Manipal on 24th November, 1971 (Manipal, India: Syndicate Bank, 1971).

Syndicate Bank's Financing of Primary Agricultural Credit Societies

The Syndicate Bank was allotted 90 societies[9] for its eight branches in Mysore State in early 1970. The bank selected only 55 societies for financing after a preliminary examination of the allotted societies' financial position and state of affairs. During 1971, 19 additional societies were included, bringing the total up to 74 societies for financing.

The societies selected by the Syndicate Bank were suffering from heavy overdues which were approximately 75 percent of their total financial obligations. Many of the societies lacked borrowing power because of a very weak share capital base. In addition, the societies' office bearers were hesitant to accept the new scheme. In spite of these formidable obstacles, the Syndicate Bank made significant progress in financing cooperative societies.

During the 1970 kharif season,[10] the bank advanced loans in the amount of Rs. 805,000 to 51 cooperative societies. Societies gave preference where possible to small farmers as the bank directed. Of the 1,508 members who received loans, about 24 percent were small farmers. The size of the loans was small: 1,020 cultivators borrowed less than Rs. 500 each; 350 members borrowed between Rs. 501 and 1,000; and the remaining members took loans between Rs. 1,001 and Rs. 5,000.

[9]Syndicate Bank, Agricultural Finance Department, "Scheme of Financing Agricultural Credit Societies in Mysore State by Syndicate Bank--A Review" (Manipal, India: Syndicate Bank, 1971) p. 1. (Mimeographed.)

[10]Kharif and rabi refer to the "fall" and "winter" cropping seasons, respectively. The kharif season extends from March through August, and rabi covers September through February.

In addition, 12 societies received Rs. 163,000 during the 1970-71 rabi season. The bank recovered about 91 percent of its loans by the end of October, 1971.[11]

The Syndicate Bank was active also in financing cooperatives under the Small Farmers Development Agency schemes in Mysore District. In 1970, 18 societies in Mysore District were financed by the bank for a total of Rs. 322,730 which went to 742 farmers.[12] The average loan was about Rs. 435. The Syndicate Bank was expected to expand its financing of small farmers through cooperatives gradually and in conjunction with the SFDA in an effort to prevent the maladies that have plagued the cooperatives in the past.[13]

The Syndicate Bank was also involved in another scheme to finance agriculture on a district basis, and this project deserves some attention.

Lead Bank Scheme

In 1969, the Nariman Committee of the Reserve Bank of India formulated the concept of the "Lead Bank."[14] The first step in the

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[11]Syndicate Bank, "Scheme," p. 1.

[12]K. V. Beliraya, "Note on Syndicate Bank's Efforts to Help Small Farmers" (Manipal, India: Syndicate Bank, November 2, 1970), p. 2. (Mimeographed.)

[13]The SFDA gives a subsidy to small farmers and, because of this subsidy, many large farmers try to portray themselves as small farmers. Many members of a single family identify themselves as separate small farmers, or large farmers may cite only a portion of their land holdings to qualify as small farmers. K. C. Beliraya takes important notice of this in "The Symbolic Relationship Between SFDA/MFALs and Commercial Banks" (paper presented to The National Seminar on SFDA & MFAL Programmes on 11-13 April, 1972, Vigyan Bhavan, New Delhi), p. 2. (Mimeographed.)

[14]Agricultural Finance Corporation Limited, Agricultural Development Schemes for Financing in North Kanara District (Mysore State) (Under

implementation of this scheme was to allot the districts in the country to the major nationalized commercial banks. Subsequently, the Lead Banks conducted surveys to identify potential for development and to provide the leadership in initiating change. Lead Banks were expected to obtain the active participation of other banks, cooperatives, and government authorities. The Syndicate Bank, as one of the Lead Banks, has done extensive work in North Kanara District, Mysore State, and has developed numerous plans for financing small farmers according to the cropping pattern common in different parts of the state. There is insufficient data to evaluate the Lead Bank scheme in this district or Lead Bank schemes in the state, but the Syndicate Bank is a leader in this program.

Other commercial banks were active in the Lead Bank Scheme. For example, the Canara Bank had prepared reports on its activities under the Lead Bank Scheme in Coorg, Kolar, and Chikmagalur Districts in Mysore State and had started studies of four other districts in the state. Some of the other commercial banks were assigned districts, but they were slow in getting their reports and activities started.

Commercial Bank Financing in Bangalore District

In 1970-71, commercial banks started financing primary agricultural credit cooperative societies in Bangalore District. Until then, the Bangalore District Cooperative Central Bank was the only institution financing cooperative societies in the district, and it was in a very

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the Lead Bank Scheme) (Bombay: Agricultural Finance Corporation, n.d.), p. ix. See also, Nationalisation of Banks; A Symposium (New Delhi: Publications Division, Government of India, 1970).

weak financial position[15] and faced with heavy overdues. During 1970-71, five commercial banks were allotted 72 cooperatives, and they actually financed 58 societies[16] to the extent of Rs. 2,014,000 and Rs. 310,000 for the kharif and rabi seasons respectively. In the following season, an additional commercial bank took up financing cooperative societies, and the other five banks assumed responsibility for 50 more societies. In total, 122 societies were allotted to the six commercial banks as of March 31, 1972. These banks actually financed 62 societies to the extent of Rs. 1,867,000 and Rs. 1,217,000 for the 1971-72 kharif and rabi seasons. Further details concerning commercial bank financing of cooperative societies in Bangalore District are available in Table 1.

The author visited agricultural finance officers of five of the commercial banks involved in financing cooperative societies in Bangalore District and observed numerous problems at the bank and village cooperative level. First, most of the commercial banks had very little experience in financing small farmers and none in financing cooperative societies. Only the Syndicate Bank planned to finance societies in Bangalore District during the 1972-72 crop year. Second, the commercial

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[15]This was essentially the opinion of the Cooperation Department as it viewed its own institution. For example, see Regional Workshop of Small Farmers Development Agencies of the Southern States, June 10-12, 1971 (Mysore: Administrative Training Institute, 1971), p. 33.

[16]G. K. Sangameswar, "Brief Note on Financial Assistance Provided by the Commercial Banks and the Bangalore District Central Cooperative Bank, Ltd., Bangalore to the Primary Agricultural Coop Societies in Bangalore District" (Bangalore: Deputy Registrar of Cooperative Societies, Bangalore District, June 6, 1972), p. 1. (Mimeographed.)

TABLE 1. Commercial and District Cooperative Bank Financing of Cooperative Societies in Bangalore District for 1970-71 and 1971-72

Source	Year	Number of Societies	Amount of Short-Term Loans in Rs.	Percentage of Recovery
Bangalore D.C.C. Bank	1969-70	78	1,499,000	17.0
	1970-71	112	2,530,000	19.0
	1971-72	165	4,992,000	25.0
Dena Bank	1970-71	7	121,000	37.3
	1971-72	10	109,000	17.4
United Commercial Bank	1970-71	34	1,519,000	60.0
	1971-72	38	1,203,000	54.0
Canara Bank	1971-72	3	50,000	n.a.
Canara Banking Corporation	1970-71	5	282,000	37.3
	1971-72	7	306,000	36.2
State Bank of Mysore	1970-71	9	314,000	99.0
	1971-72	11	316,000	52.6
Union Bank of India	1970-71	5	87,000	45.9
	1971-72	4	99,000	44.4

Source: G. K. Sangameswar, "Brief Note on Financial Assistance Provided by the Commercial Banks and the Bangalore District Central Cooperative Bank, Ltd., Bangalore to the Primary Agricultural Co-op Societies in Bangalore District" (Bangalore: Deputy Registrar of Cooperative Societies, Bangalore District, June 6, 1972), pp. 1-7. (Mimeographed.)

banks and the district cooperative central bank continued to bicker over the selection and financing of cooperative societies.[17] If the commercial banks failed to finance the societies allotted to them, the Bangalore District Cooperative Central Bank reclaimed and financed them. This was an open invitation for quarreling among banks, and it occurred very frequently. The common apprehension prevailing among most of the cooperators was that the entry of commercial banks into the cooperative movement would dampen the image of cooperative credit structures and thereby weaken the cultivators' faith in cooperation.[18] Third, the commercial banks faced tremendous problems of revitalizing the village cooperatives. Even though the Deputy Registrar of Cooperative Societies for Bangalore District visited many of the societies allotted to the commercial banks, many problems remain.

The Union Bank of India was financing cooperative societies in Nelamangala Taluka, Bangalore District, with mixed success. The author visited one of the Union Bank's cooperatives and observed many problems typical to the cooperative movement and commercial banks. This cooperative had over 30 percent of its total short-term loans overdue from

[17] During a conference held on June 28, 1972, at the Bangalore D.C.C. Bank to review the progress of commercial banks and the Bangalore D.C.C. Bank, presided over by G. V. K. Rao, Development Commissioner, Mysore State, the commercial banks contended that the primary societies were not allotted to them from the D.C.C. Bank and hence they could not finance them. In addition, the commercial banks charged that the supervisor of the D.C.C. Bank had tried to get the farmers to refuse the services of the commercial banks.

[18] R. R. Hedge, "The Entry of Commercial Banks in the Field of Agricultural Credit; An Apprehensive View," Co-operative Training College: Special Issue, VII (March, 1972), p. 103.

31 member-borrowers. Over 49 percent of the borrowers were defaulters on their 1970-71 crop loans, and the society owed the Bangalore District Cooperative Central Bank Rs. 7,000 in previous overdues. Cultivators with overdue loans claimed that a shortage of rain was the main reason why they were unable to repay their loans.

Factionalism among village cooperative members poses a serious problem for commercial banks, and the Cooperation Department is trying to revitalize weak societies. During the interview with the paid secretary of a cooperative financed by the Union Bank,[19] an argument and fight broke out between the secretary and his supporters and an opposition faction over administrative procedures and elections. The opposition accused the paid secretary of failing to notify them in time for important meetings and decisions. Even the presence of the Deputy Registrar of Cooperative Societies, a very powerful official in the district, could not calm the opposing factions. Eventually, the interview ended when the argument spilled out into the street. The Deputy Registrar threatened to supersede the committee of management and appoint a bank supervisor if the members did not settle their differences.

[19]The members of the cooperative had waited most of the afternoon and early evening for the Deputy Registrar and the author, and the fact that they were cramped into a small, dimly lighted room did nothing to calm heated tempers. The impact of politics upon the cooperatives seems to be getting heavier and more direct. In several states, Mysore included, politicians are heavily tied to the leadership of cooperatives. "They tend to use the cooperatives as levers or weapons in jostling for position with their rivals." For more evidence, see Daniel Thorner, Agricultural Cooperatives in India, A Field Report (New York: Asia Publishing House, 1964), p. 11.

III. COOPERATIVE CREDIT ADMINISTRATION AND THE FARMERS

Members of primary agricultural credit cooperatives are provided credit on the basis of a rational assessment of their needs for agricultural purposes and subject to their repayment capacity. A member is eligible for loans if he is not a defaulter and holds shares in the society in the prescribed proportion to the loan required or the limit sanctioned. Generally, the limit is 10 times the share amount.[20] The requirements for share capital are the same for Bangalore, Mandya, and Mysore Districts since all institutions in each district of Mysore State are governed by the same Act and Rules. These are major conditions which govern the short-term credit structure. The only exceptions to the rules that affect the cultivator's eligibility for credit might be the case of a defaulter who had his short-term loan converted into a medium-term loan. In this case, even though the borrower is a defaulter, he could receive a new crop production loan. This arrangement would give the cultivator a better chance to repay his loans without being cut off from the benefits of the cooperative movement.

In the crop loan system, the timeliness of credit is of crucial importance. Ideally, the loan procedure would be designed so that the cultivator-borrower gets his loan at the time he needs it, and procedural formalities would be kept to a minimum. However, this is frequently not

[20]Report of Study by Shri Y. P. Rajput, Director (Administrative Intelligence), Department of Cooperation, Government of India, Co-operative Structure in the Pilot Project Purnea Taken Up Under the Small Farmers' Development Agency Scheme (n.p., n.d.), p. 15.

the case. Preliminary delays in providing credit to the farmers can occur at every step in the loan application procedure. The steps, outlined in the following section, are based on the recommended practices[21] which may vary slightly from state to state. However, these steps are followed in the three districts of Mysore State covered in this survey.

Loan Application and Sanction Procedures

The first step in the loan application procedure consists of holding the annual district field workers' conference for recommending crop-wise scales of finance and the finalization of these norms by the district cooperative central bank. The scale of finance for some major crops may vary from year to year. Representatives of primary societies, prominent ryots (farmers), district cooperative bank officials, Cooperation Department personnel, and technical people from the Agricultural Department make up the field workers' conference. Since commercial banks are financing cooperatives, their representatives are included in the conference. Until recently, commercial banks and the district cooperative banks had different scales of finance for the same crops; however, conferences have produced uniform scales. Examples of scales of finance are found in Chapter VI and Appendix A. In addition to fixing the cash and kind components of the scales of finance, the field workers' conference determines the due dates for repayment and discusses the year's program for the cooperatives.

[21]The Crop Loan Manual gives the recommended application procedures for production credit agencies in India and the information in this section is based on a summary of the procedure found in Report of the All-

On the basis of the scales of finance, the secretaries of the societies or bank supervisors prepare for each society a "normal credit statement" which serves as an application for the society which is made up of applications from individual members. The normal credit statement lists such information as the cultivator-member-borrower's name, record of rights and index of land, acreage, survey number, crop pattern, and the crops and acreage for which he is applying for credit. The committee of management or the general body of the society then considers the statement and recommends the amount of credit for each member. After deducting the society's resources available for lending from the total amount requested, the managing committee applies to the district cooperative central bank or to a commercial bank, if the society has been allotted to that sector, for the balance. Since most of the societies in the three districts surveyed were weak in share capital and owned funds, the district or commercial banks provided nearly 100 percent of the loans.

The second stage in the loan application procedure consists of scrutiny and verification of the normal credit statement by the district cooperative central bank supervisor at the bank's branch office, which may be located at taluka centers. At this stage, the paid secretary carries the normal credit statement to the branch office or to the main office of the commercial banks, as the case may be. The supervisor checks the accuracy of the particulars in the statement in regard to crops and acreages of the prospective borrowers, and he also makes a

India Rural Credit Review Committee, B. Venkatappiah, chairman (Bombay: Reserve Bank of India, 1969), p. 495.

report on the workings of the society in regard to its overdues and actions against defaulters before sending the statement on to the head of the office of the district bank for sanctioning.

The third stage of the loan application procedure occurs at the district cooperative bank--or in the case of commercial banks, at the agricultural finance branch office at taluka or district headquarters--where the manager scrutinizes the normal credit statement, looking mainly into the society's recovery and repayment performance. The normal credit statement with the manager's report is submitted to the loan committee which sanctions the loan and sets the credit limit. Loans are normally approved in about 15 to 30 days at the district bank. Some delays occur at this point if the loan committee does not meet frequently. Additional delays occur if the district bank follows elaborate and time consuming scrutiny procedures. In Bangalore District, loans were approved by the bank in about 15 to 30 days. Mysore District had about the same record. In Mandya District, the Vaikunth Mehta National Institute studies found that the normal credit statements for food crops and sugar cane were prepared separately, which resulted in extensive duplication of work and delay in providing credit to the farmer.[22]

In the fourth stage, the district cooperative central bank issues checks to the members to the extent of the loan sanctioned by the bank. The checks are signed by the president and secretary of the cooperative society and countersigned by the concerned supervisor of the bank. The cultivator-borrower takes his check, which he receives at the cooperative

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[22]Report of the All-India Rural Credit Review Committee, p. 492.

society, to the branch bank, where he receives cash. For the kind component, the primary society may issue its members' delivery orders on the taluka agricultural produce marketing society so that they can get their fertilizers from it. Also, the primary credit society can distribute fertilizers directly to the borrowers as part of their loans if it has storage facilities (godowns). Usually only large-sized cooperative societies had godowns, while small cooperatives were obtaining funds for construction.

Loan applications can be delayed for many reasons, and in such cases, the farmers do not receive their inputs on time. Hence, they do not receive the benefits that credit is intended to supply. First, application forms are often too elaborate and require particulars which are difficult to obtain. Second, the practice of requiring mortgage of land as security rather than accepting the cultivator's future harvest is responsible for delays. Commercial banks are more inclined to require land instead of crops as security. Third, loan applications are often defective and incomplete. This is the result of ill-qualified and untrained paid or honorary secretaries at the primary level. Finally, delays can occur in the disbursement of loans if the district banks fail to communicate with the cooperatives once the loans are sanctioned.

Cost of Credit

The initial costs of obtaining credit from the cooperative societies in Mysore State are as follows: 1) Rs. 1.00 per member for admission to the society; 2) Rs. 0.25 for a share fee; and 3) at least one share in the cooperative society at Rs. 10.00 per share. At the beginning of the

season, societies prepare the normal credit statement wherein the actual credit requirements are indicated. The farmer-borrower's loan application from which the society's normal credit statement is built up consists of the following documents: 1) loan application form, Rs. 0.05; 2) extracts of village revenue account (record of rights and index of land), Rs. 0.10; 3) in the case of tenancy, extract of Phani (register of crops grown), Rs 0.05; 4) Encumbrance Certificate, Rs. 0.05; and 5) Mortgage bond or declaration form, Rs. 0.05. The total cost of these documents is Rs. 0.30. Sometimes farmers incur travel costs in coming to the cooperative society to file the loan application.

The real cost of credit to the farmer-member-borrowers is far more than the simple interest rate charged by the cooperative societies for short-term loans. In neighboring Tamil Nadu State, the cost of a Rs. 100 loan from the cooperative societies was, on the average, Rs. 17.20.[23] In that state, the cooperative societies charged 7 percent interest for one year, while in Mysore State, cooperatives charge 9.0 or 9.5 percent for their loans. The remainder of the cost came from application charges, certificates, transportation, share capital, and incidental costs. The costs of obtaining credit from cooperative societies in Mysore State are presented in Table 2.

The Small Farmers Development Agencies in Bangalore and Mysore Districts were providing subsidies for the small farmers so they

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[23] V. Rajagopalan, Impact of Institutional Finance for Agricultural Development in Tamil Nadu: An Economic Appraisal--1970-71 (Coimbatore, Tamil Nadu: Directorate of Agriculture, n.d.), p. 34.

TABLE 2. Charges Per 100 Rupees of Short-Term Credit from Cooperatives in Mysore State

Particulars	Costs
	Rupees
Loan application including all documents	0.30
Stamp fee and other statutory charges	Nil
Transportation charges	1.00
Service charges	Nil
Share capital (10% of borrowings)	10.00
Share fee per share	0.25
Interest charges (9 1/2%)	9.50
Incidental charges	Nil
Total	21.05

Source: Letter from G. K. Sangameswar, Deputy Registrar of Cooperative Societies, Bangalore District, "Procedures for Obtaining Production Finance from a Co-operative Society," Bangalore, India, November 19, 1972.

could qualify for membership in the cooperative societies and loans. The SFDA provided a risk fund calculated at 9 percent of the credit advanced from the district cooperative central bank to identified small farmers and 6 percent of the credit borrowed from commercial banks.[24] The risk fund was a form of insurance to protect cooperative societies against excessive amounts of overdue credit. The SFDA also subsidized small farmers' share capital so that they could qualify for membership in the societies. In addition, the SFDA provided small farmers with subsidies to reduce medium-term credit needs. The procedural formalities and the incidental expenses involved in cooperative credit kept many small farmers away from these development institutions before the creation of the Small Farmers Development Agencies.

The SFDA has advanced share capital loans to cooperative societies so that small farmers could qualify for short-term loans. In some states, crop production loans must not exceed 10 times the member's share capital. Some cooperative officials have suggested that the share capital requirements be raised to 20 percent of the cultivator's loan. Medium and long-term loans also require high share capital deposits, and this further limits the small farmers' access to credit. Such requirements have restricted the flow of credit to the weaker elements of the agricultural sector.

[24]The Small Farmers' Development Agency, The Small Farmers' Development Agency, Bangalore (Bangalore: Government of Mysore, 1971), p. 26.

IV. INSTITUTIONAL PROCEDURES AND REPAYMENT

Many factors would seem to account for the poor repayment record of cooperative societies and their members. The important causes are found at all levels of the cooperative credit structure. At the district cooperative bank level, inadequate supervision and fragmentation of responsibility are apparently the major reasons for poor recoveries. The primary cooperative societies' weak committees of management, factionalism in the committees, and the poor quality of the paid secretaries are all contributing factors to the problem of overdues. At least some cultivators at the base of the structure weaken the entire organization through willful default or because of unexpected contingencies. In addition, the collection procedure for overdue loans and the role of the sale officer determine a large part of the operational efficiency of cooperative credit.

Besides access to secondary sources of information, the author had many on-the-scene opportunities to observe the relationship between institutional procedures and crop loan repayment performance. The following section attempts to depict in systematic fashion the overall impressions gained from these sources about these practices and problems. Repayment patterns of the borrowers included in the formal survey are presented and analyzed in later chapters.

Administrative Factors Affecting Repayment

An important test of the operational efficiency of any credit system is the recovery of loans on due dates. The nationwide percentage of overdues has been going up from year to year. During the mid-1960's

in Mysore State, the overdue position of the district cooperative central banks was very alarming and impeded the operation of the cooperative structure in several ways. The All-India Rural Credit Review Committee showed that approximately 40 percent of all short and medium-term cooperative credit was overdue in 1966-67.[25] Many societies had such high overdues that they could not serve as active channels for credit. "Secondly, the real figures would be even more depressing but for the window-dressing which is known to take place around the end of the co-operative year through unauthorized extensions and book adjustments occuring at the primary level."[26] In addition, part of the problem lies in the supervision of the cooperative movement.

Responsibility for supervision of the cooperatives and their activities is divided between the financing bank and the Cooperation Department.[27] The district cooperative central banks have supervisors located at their head and branch officers. These supervisors are usually in charge of 10 cooperatives. Their primary concern is scrutinizing the normal credit statement and recovering the loans at the end of the harvest season. At the present time, the major criterion for judging the success or failure of the bank's lending activities is the percentage of credit recovered from the cooperative societies. During the survey of cooperatives in Bangalore District, the Bangalore District Cooperative Central Bank's supervisors and administrative

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[25] Report of the All-India Rural Credit Review Committee, p. 176.

[26] Ibid., p. 151.

[27] Ibid., p. 505.

personnel's preoccupation with recoveries created a stormy patron-client relationship.

The bank supervisors, who accompanied the author on the survey, were always distrustful of the farmers' responses to the author's questionnaire, especially when the farmers gave their reasons for defaulting on their crop production loans. The supervisors felt that a majority of farmers were willfully defaulting on their obligations, and occasionally they resorted to threats of legal action if the money was not forthcoming.[28] Other observers have recorded similar examples of bossism in the Mysore State cooperative movement.

A Peace Corps Volunteer working in the village of Shemba in Mysore State has underscored the bottlenecks that exist in the interaction between the lending institution--the district cooperative central bank--and the cultivators. According to this Volunteer, Bill Samsef, the Cooperative Bank officials looked upon the Indian farmers as ignorant and incapable of making any decisions for themselves.

> Now everyone seems to distrust the farmer's ability to use the credit productively. The phobia about repayment has led the institution to restrict its lending policies even more, and to make it that much more likely that the farmer will abuse the credit extended to him. . . . Underlying all this is a distorted,

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[28]The author witnessed the power of the bank supervisors over the farmers on numerous occasions, but two episodes stand out in particular. During the survey in Mysore District, the author, accompanied by a bank supervisor and cooperation extension officer, visited an isolated cooperative which was overdue on its crop production loan. While the author interviewed the paid secretary, some of the defaulting farmers selected for interviews tried to hide from the cooperative officers and others ran in search of funds to repay their loans. During another interview in Bangalore District, bank personnel repeatedly threatened defaulting farmers with legal action if they

> almost fanatical concern for assurance of repayment with no real attempt to examine the causes of default and correct them.[29]

Similar reports of lending officials' contempt for peasants and agricultural workers exist in almost every reliable study of agricultural lending institutions in India.[30]

Samsef reports also that Shemba farmers have abused the credit extended to them and displayed outright indifference to their repayment responsibilities. Nevertheless, farmers were aware of the positive advantages of inputs, such as fertilizer and insecticides, that credit from the cooperative provides. If farmers were persistently indifferent to their repayment responsibilities,[31] they could not hope to obtain credit for many years. Samsef's evidence suggests that there were other reasons why borrowers were slow to repay their loans. According to the Report of the All-India Rural Credit Review Committee, the primary cooperative societies' weak committees of management and their poorly qualified paid secretaries were contributing factors to the repayment problem. Factionalism in the committees of management, committee members' defaults on their own loans, and the laxity of the

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did not repay their loans regardless of the reasons they gave for being overdue.

[29]Bill Samsef, "Loan and Credit Extension for Defaulted Farmers" (report written by a Peace Corps Volunteer, Mysore, India, 1968), pp. 2-3. (Mimeographed.)

[30]Report of the All-India Rural Credit Review Committee, p. 501.

[31]"Even though a member of cooperative agricultural society repays his loan earlier or in time, he has to wait until the recovery of all other members to get the next seasonal crop loan because the District Cooperative Central Bank grants loans to the society as a whole after the full recovery, or in some cases, at least 75 percent

committees in encouraging farmers to repay their loans have all been contributing factors in the erosion of members' loyalty to their cooperative. The members of the managing committees have remained in office for long periods of time, and they have used their positions as levers of power over other farmers.

The paid secretaries have been blamed for their poor quality work, but they are only low paid clerks who keep the society's records and prepare the normal credit statement. Most of the paid secretaries interviewed during the surveys received between Rs. 100 and Rs. 250 per month. The bank supervisors expected them to actively seek out farmer-borrowers and demand repayment of the loans, an activity which could provide plenty of room for corruption and mismanagement of funds. In addition, there was a rapid turnover of paid secretaries in all districts surveyed in Mysore State, and this explains some of the problems with the preparation of the normal credit statement and the recovery of loans.

Causes of Overdues

Natural calamities such as severe drought, floods, cyclones, hailstorms, and pests result in widespread crop failures every few years in different parts of India. These calamities adversely affect the cultivator's repayment capacity. Even though the impact of crop

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recovery, of the previous loan. Due to this, every member postpones repayment, all the time watching and keeping himself informed of the overall recovery level . . . this leads to overdues." V. B. R. S. Somasekhara Rao, "Crop Loan System Through Cooperative Central Banks in Andhra Pradesh," Indian Cooperative Review, VII, No. 2 (January, 1970), p. 227.

failure is often exaggerated by farmers who want to conceal their real yields in order to reduce their repayment responsibilities, the problem is quite real and serious, and the national government has implemented plans to alleviate the impact of such calamities on the cooperatives and their members.

The Reserve Bank of India Act was amended in 1955 to establish the National Agricultural Credit (Stabilization) Fund which provides for converting short-term overdues of state cooperative apex banks into medium-term loans when the state banks were unable to repay their loans because of natural calamities. Primary cooperative societies were then able to convert their overdue loans to the district bank in the same manner and thus offer some debt relief to their borrowers. The All-India Rural Credit Review Committee discovered that this arrangement was not satisfactory, since it places a heavy burden on the cooperatives and the district banks to meet the payments on the medium-term credit so that they can qualify for new crop production loans in the following season. However, during the widespread droughts of the mid-1960's, there was considerable delay in implementing the Stabilization Fund.[32]

Now that commercial banks have entered the cooperative financial structure, they face the same problems of overdues as the district banks. Their agricultural program has been limited to only a small

[32]Report of the All-India Rural Credit Review Committee, pp. 519-521. If another natural calamity occurred before the first conversion loan had been repaid, the converted loan payments could be extended up to five years and a second medium-term loan could be sanctioned for three years for the conversion of the amount falling due that year.

percentage of total lending activities. Nevertheless, they must adjust to overdues from cooperatives on an individual basis. Commercial banks have been building up the staffs of their agricultural finance departments to investigate cases of real crop failure and take action against those willful defaulters who claim crop failure as the cause of their overdues.

Some studies have suggested that reasons for overdue loans include delays in advancing loans, lack of supervision, and the influence of vested interests. Misusage of credit and illness of the cultivator or his family are additional causes of overdues. During the author's surveys, the cooperative officials accused politicians of encouraging borrowers to default on their loans. While such accusations were hard to prove, the following observations by the Syndicate Bank represent the theme usually found in these charges.

> Vote seeking politicians, with a view to secure [sic] easy and cheap popularity, sometimes encourage lethargy in repayment of dues. They become reckless and irresponsible in the years of general elections or the district bank's board elections. . . . In some cases, office bearers of the society manage to raise funds from local money lenders or traders at exorbitant rates of interest for repayment of Bank's dues and take undue advantage out of it.[33]

Ultimately, these actions work to the detriment of the cultivator-borrowers and ruin the cooperative societies.

One source asserts that vested interest groups have used the cooperative central financing agencies as spring boards for political

[33]Syndicate Bank. Proceedings of the Seminar on "Financing of Primary Agricultural Credit Societies by Commercial Banks" held at Manipal on 24th November, 1971 (Manipal, India: Syndicate Bank, 1971), p. 22.

elections.[34] These entrenched groups reportedly have exploited the banks' rules and procedures to allocate larger loans to their constituencies or permitted the extension of the repayment date. This source states that, at the local level, pressure groups have dominated the committees of management and paid secretaries for their interests, which causes further corruption in the cooperative societies by granting special favors.

Double-Entry Fictions

The repayment of production credit is thoroughly entangled in the system of "double-entry fictions" (DEF), a direct result of two conflicting systems--the moneylender and the cooperative. Fictitious repayments occur when an outstanding loan falls due. Instead of repaying the loan, cultivators receive ". . . on or about the same date a fresh loan of the same amount, actual repayment either not taking place at all or being made purely as a formality."[35] Double-entry fictions arise when farmers borrow from moneylenders to repay the principal and interest due on a cooperative loan. Cooperatives then extend a new loan, based on the cultivator's "sound" credit rating, which goes to repay the debt to the moneylender.[36]

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[34]S. G. Madiman, "Agricultural and Institutional Planning," The Economic Weekly (Annual Number February, 1965), p. 287.

[35]Shirley Childers, "Deccan Moneylenders Systems: Double-Entry Fictions," (paper presented at the Conference on Problems of Economic Change XII, Atlanta, Georgia, November 15, 1970), p. 2. See also, Gilbert Etienne, Studies in Indian Agriculture: The Art of the Possible, trans. by Megan Mothersole (Berkeley: University of California Press, 1968), p. 118.

[36]Childers, Deccan Moneylenders, p. 3. During one of the author's interviews in Bangalore District, a cultivator-borrower explained that he was unable to repay his crop production loan because he was heavily

Rules and regulations of the rural credit scheme intensify the pressure for DEF. The eligibility of cultivator for a crop loan is tied to his cooperative's eligibility. In order to receive new loans from the district cooperative central bank, cooperatives must recover a minimum percentage, usually 50 percent, of their previous loans. Village cooperatives are constantly under pressure to create DEF to satisfy the minimum percentage rule, and the practice definitely weakens the cooperatives' operational efficiency yet allows farmers to continually qualify for loans.

Sale Officer and Collection Procedures for Overdue Loans

The district cooperative central banks and the commercial banks,[37] have been attempting to recover overdue loans, and in some cases they have been successful. However, the complicated legal procedures, the low value of recoverable assets, and politicians have hampered their efforts. The sale officers of the Cooperation Department have to attempt the recovery of loans in a careful, tactful, and courageous manner because the names, prestige, and properties of

indebted to a moneylender. He could not remember how much he owed or what the interest rate was on his loan. However, the moneylender, although not a member of the cooperative society, was present and supplied the information about the cultivator's indebtedness.

[37]The Syndicate Bank has made substantial progress in reducing the amount of overdue loans to the various district cooperative banks in Mysore State since it was allotted 90 societies for its eight branches in 1970.

defaulters are at stake, and they have been known to resort to violence[38] to keep their property.

The legal arrangement for the collection of overdue loans from cultivator-borrowers has been of little help to the cooperative societies, principally because it has been very difficult to administer. Obviously, recovering bad debts through judicial proceedings has been costly and time-consuming for the District Registrar of Cooperative Societies and his staff. The farmers' lack of tangible assets raises the question of how productive legal action has been. In addition, recovery procedures have been politically and socially unpopular.

The procedures for recovering overdue loans require extensive paper work that must be processed and acted upon by the cooperative officials. The procedures involved in recovering overdue crop production loans can be broadly outlined as follows:

1. Annually, the cooperative society furnishes a "statement of accounts in respect of the arrears" to the Registrar of Cooperative Societies.
2. The Registrar may make an enquiry and grant a certificate for the recovery of the arrears and he may dispose of the case in accordance with the provisions of section 71 of the Act. The Registrar may empower members of his staff to

[38]Since Sale Officers are often threatened and manhandled by the entire village, they go in groups with police protection when they foreclose on property (execution of awards.) For example see M. Manchaiah, "Practical Difficulties Encountered in the Recovery of Co-operative Over Dues," Co-operative Training College: Special Issue, VII (March, 1972), p. 118.

carry out the recovery of arrears and they are to be considered as a civil court for certain tasks in the recovery process.

3. Usually, members of the Registrar's staff carry out the task of recovering the overdue loan. The Recovery Officer within whose jurisdiction the debtor resides or has property verifies the correctness of the particulars set forth in the application with the records. He then prepares a demand notice setting forth the name of the debtor and the amount due and forwards it to the District Sale Officer.
4. The Sale Officer shall, after giving previous notice to the decree-holder, proceed to the village where the judgement-debtor resides, or has property to be attached and serve the demand notice upon the judgement-debtor if he is present. The Sale Officer can seize movable and attach immovable property if the judgement-debtor fails to pay the amount due. The Sale Officer gives an "intimation" of the place, date, and hour at which the attached property will be brought to sale, if the amounts due are not paid before such date. The judgement-debtor must bear the cost of the Sale Officer's expenses out of the sale of his property.
5. The Sale Officer shall on the day previous to and on the day of the sale, cause proclamation of the time and place of the intended sale to be made by beat of drum in the village in which the judgement-debtor resides and in such

other place or places as the Recovery Officer may consider necessary to give due publicity to the sale.

6. The Sale Officer can decline to accept the highest bid if the price appears to be unduly low or for other reasons. If the sale receipts exceeds the amount due, after deducting the interest and the expenses of the process, the excess amount shall be paid to the judgement-debtor.[39]

The recovery of overdue loans is not a speedy process, since the rules and regulations governing the sale process require that the cooperative official perform their work according to specified periods of time as given in sections of the Act. The number of official forms and documents that are required can cause further delay. In periods of drought or widespread natural disaster, an attempt to recover overdue loans in this manner would be fruitless.

Statistics for the 35 sample cooperative societies during the 1970-71 crop year illustrate the difficult task of seeking legal action against a majority of defaulters. The logistical problems of processing a large number of cases appeared to be formidable. In addition, the villagers were not expected to give their full cooperation in this matter since foreclosure on their property represented both severe social and economic loss. Under these conditions an

[39]Mysore State Government, The Mysore Co-operative Societies Act, 1959 and The Mysore Co-operative Societies (Amendment) Act, 1964 (Bangalore: The Director of Printing, Stationery, and Publications at the Government Press, 1967), sections 36, 100, and 101. The Act contains a complete list of steps involved in seeking legal action against defaulters including regulations for forcing open the women's quarters of farm houses in order to seize movable property.

insurmounted backlog of cases developed. In the minds of the cooperative officials with whom the author talked, the only solution was a vigorous attempt to persuade the farmers to repay their loans. Consequently, farmers and cooperative officials had developed a healthy distrust of each other.

CHAPTER III

MYSORE COOPERATIVES - THEIR LENDING ACTIVITIES AND EXPERIENCES

The results of the survey of primary agricultural credit cooperative are organized into three sections. First, the characteristics of the societies in the sample are presented by districts. Second, repayment experiences with large and small member-borrowers are compared. Third, characteristics of the sample societies are compared according to percentages of their short-term loans overdue. These characteristics and experiences give an indication of problems within the village level cooperatives. The material presented is intended to be a preliminary overview of the cooperative movement that will set the stage for the subsequent analysis of Mysore farmers' borrowing practices and problems.

The sample of cooperatives was selected through interviews with the deputy registrars of cooperative societies in Mysore, Bangalore, and Mandya Districts of Mysore State, during the spring of 1972. The deputy registrars were asked to select 10 or more societies from one or two talukas in their districts to represent good, poor, and very poor operation. Alternate cooperatives were chosen in case impassable roads or some other reason prevented the cooperative administration and farmers from attending the appointed interview. Data for a sample of 35 service cooperative societies and 136 farmer-member-borrowers were obtained through interviews with the paid secretaries and members

between May and July, 1972. The data relate to the 1970-71 crop production year and the status of the cooperative at the time of the interview.

The data are presented for all cooperative societies and on a district basis. The sample cooperatives belonging to each district were drawn from geographical areas with similar features. Mysore District has a well organized tank irrigation system as well as rain fed areas. In general, sample cooperatives in Mysore Taluk and K. R. Nagar Taluk, Mysore District, contained areas of both irrigated nad rain fed land. Mandya District has very well organized channel and tank fed irrigation facilities. Bangalore District has a larger portion of rain fed land than tank fed irrigated land. Cultivators in the district depend heavily on monsoon rains.[1]

The sample of 35 primary agricultural credit cooperative societies selected represents a broad spectrum of cooperative credit activities in Southern Mysore State. In 1970, there were approximately 19,763 cooperatives of all types in the state. Of these, 8,722 were agricultural credit cooperatives with a total membership of 1,771,000. About 18 percent of all agricultural credit cooperatives in Mysore State are found in Mysore, Bangalore, and Mandya Districts. The 35 sample cooperative societies represent approximately 2 percent of the total for the three districts. General characteristics related to these cooperatives in the three districts are given in Table 3.

[1]K. Abhishankar, ed., Mysore State Gazetteer; Mandya District (Bangalore: The Director of Printing, Stationery and Publications at the Government Press, 1967), pp. 88-118.

TABLE 3. Characteristics of All Primary Agricultural Credit Cooperative Societies in Three Districts of Mysore State, India, 1970-71

Item	Mysore[a] District	Bangalore[b] District	Mandya[c] District
Number of agricultural credit cooperative societies	568	610	423
Number of viable agricultural credit cooperative societies	52	66	347
Number of weak and dormant credit cooperative societies	448	438	76
Number of liquidated credit cooperative societies	68	106	19
Number of members in credit cooperative societies	111,000	96,000	138,142
Population of each district	2,073,568	3,346,405	1,152,763
Amount of short-term loans in Rs.	8,400,000[d]	7,546,000[e]	28,518,273
Number of societies receiving short-term loans	239	244	n.a.
Percentage of short-term loans recovered	67%	26%[e]	69%[f]
Percentage of short-term loans overdue	33%	77%	31%[f]
Members' and government share capital in Rs.	3,459,000	3,019,000	11,581,000[f]
Members' share capital in Rs.	2,876,000	n.a.	8,595,000[f]
Government share capital in Rs.	583,000	n.a.	2,986,000[f]
Number of small farmers identified by the Small Farmers' Development Agency	34,902[g]	28,330[g]	n.a.

TABLE 3 (continued)

[a]K. Balasubramanyam, Divisional Commissioner and Chairman, A Pilot Project on the Agricultural Development of the Small Farmers of Mysore District (Bangalore: Government Text Book Press Mysore, 1970), pp. 32-55.

[b]The Small Farmers Development Agency, The Small Farmers Development Agency (Bangalore: Government of Mysore, 1971).

[c]A Note on the Progress Since Inception of the Intensive Agricultural District Programme, Mandya, Up to March, 1971 (n.p., 1971), pp. 23-28.

[d]Interview with S. N. Nagarai, Manager, Mysore District Cooperative Bank, at Mysore, May 26, 1972. One dollar is equal to about Rs. 7.25.

[e]G. K. Sangameswar, "Brief Note on Financial Assistance Provided by the Commercial Banks and the Bangalore District Central Cooperative Bank, Ltd., Bangalore to the Primary Agricultural Co-op Societies in Bangalore District" (Bangalore: Deputy Registrar of Cooperative Societies, Bangalore District, June 6, 1972), pp. 7-8. (Mimeographed.) The percentage of short-term loans recovered is for the Bangalore District Cooperative Central Bank, the major source of short-term loans for cooperative societies in the district, although five commercial banks financed fifty eight primary agricultural credit cooperative societies during 1970-71.

[f]The Mandya District Cooperative Central Bank, Ltd., "A Brief Note on the Working of the Bank as on 29-2-72," Mandya, 1972, pp. 2-7. (Mimeographed.)

[g]Regional Workshop of Small Farmers Development Agencies of the Southern States, June 10-12, 1971 (Mysore: Administrative Training Institute, 1971), p. 104.

I. CHARACTERISTICS OF THE COOPERATIVES SURVEYED

Certain characteristics of the 35 sample agricultural credit cooperative societies need to be explained in terms of their impact upon the success or failure of the cooperative society. Data on these characteristics are found in Table 4. The travel time from the average village to the cooperative society in minutes is included as an indication of the travel cost and ease of access to the society. In the cases where farmers live four hours distance from the cooperative, their cost of travel is in terms of lost work rather than bus fares, since most would walk to the society.

The education of the paid secretary should give a measure of the clerk's ability to keep the society's records and build up the society's loan application. Four secretaries of the sample societies had received a short training course in cooperative principles. One secretary had a B.A. degree and one had a B.S. degree; however, the majority of secretaries had only a high school education.

One of the important improvements in cooperative administration in the last few years has been the reduction of the time required to process the society's loan application by the district cooperative central bank. In the past, according to some farmers and cooperative officials, the loan applications were sanctioned long after crop planting time had passed. Farmers received their loans later than they expected them; consequently, crops were often planted without the inputs which the loans were intended to provide. Among the sample cooperatives, processing time of the average loan ranged from 9 to 45

TABLE 4. Characteristics of Sample Agricultural Credit Cooperative Societies--35 Cooperatives--Three Districts of Mysore State, India, 1970-71

Item	Mysore District	Bangalore District	Mandya District	All Cooperatives
Number of cooperatives in the sample	10	15	10	35
Number of villages served by each cooperative				
Mean	4	6	3	5
Range				
High	10	12	7	12
Low	2	2	1	1
No. of co-ops with:				
1-3	3	2	8	13
4-6	5	6	0	11
7-9	1	5	2	8
10-12	1	2	0	3
Population of the area served				
Mean	6,030	5,651	3,756	4,241
Range				
High	22,000	14,560	7,000	22,000
Low	1,500	2,270	2,085	1,500
No. of co-ops with:				
1,500-3,000	5	3	4	12
3,001-4,500	1	4	3	8
4,501-6,000	1	5	2	8
6,001-7,500	0	0	1	1
7,501 and above	3	3	0	6
Travel time from average village to cooperative society in minutes				
Mean	136	75	29	79
Range				
High	240	240	60	240
Low	30	30	15	15
No. of co-ops with:				
15-30	2	7	9	18
31-45	1	0	0	1
46-60	2	4	1	7
61 and above	5	3	0	8

TABLE 4 (continued)

Item	Mysore District	Bangalore District	Mandya District	All Cooperatives
Years of education of the paid secretary				
Mean	11	10	10	10
Range				
High	15	15	13	15
Low	9	7	8	7
No. of co-ops with:				
7-10	4	7	2	13
11-14	4	7	8	19
15-19	2	1	0	3
Number of members in the cooperative society				
Mean	302	265	626	390
Range				
High	393	517	1,800	1,800
Low	172	60	215	60
No. of co-ops with:				
0-200	1	5	0	6
201-400	2	5	2	9
401-600	0	3	5	8
601 and above	0	0	1	1
Members' share capital in Rs.				
Mean	14,048	18,635	69,170	31,763
Range				
High	32,840	45,919	157,350	157,350
Low	3,410	5,000	14,970	3,410
No. of co-ops with:				
0-15,000	7	5	1	13
15,001-30,000	2	8	2	12
30,001-45,000	1	1	1	3
45,001 and above	0	1	6	7
Government share capital in Rs.				
Mean	6,500	8,833	6,640	7,603
Range				
High	10,000	10,000	13,400	13,400
Low	0	0	0	0
No. of co-ops with:				
0-5,000	4	2	5	11
5,001-10,000	0	0	1	1
10,001 and above	4	13	4	21

TABLE 4 (continued)

Item	Mysore District	Bangalore District	Mandya District	All Cooperatives
Time gap for average loan application between receipt and sanction by District Central Cooperative Bank in days				
Mean	23	22	19	21
Range				
High	45	45	45	45
Low	15	13	9	9
No. of co-ops with:				
9-15	4	7	6	17
16-30	5	7	3	15
31 and above	1	1	1	3
Total members on the committee of management[a]				
Mean	8	9	10	9
Range				
High	9	15	15	15
Low	1	9	9	1
No. of co-ops with:				
0-3	1	0	0	1
4-7	0	0	0	0
8-11	9	14	8	31
12 and above	0	1	2	3
Number of large farmers on the committee of management				
Mean	6	7	7	7
Range				
High	9	9	9	9
Low	0	4	0	0
No. of co-ops with:				
0-3	1	0	1	2
4-7	5	6	5	16
8 and above	4	9	4	17

TABLE 4 (continued)

Item	Mysore District	Bangalore District	Mandya District	All Cooperatives
Number of small farmers on the committee of management				
Mean	2	2	4	2
Range				
High	5	10	9	10
Low	0	0	0	0
No. of co-ops with:				
0-3	7	12	6	25
4-7	3	2	2	7
8-11	0	1	2	3
Percentage of directors of the committee of management who are large farmers				
Mean	66	78	65	71
Range				
High	100	100	100	100
Low	0	33	0	0
No. of co-ops with:				
0-25	1	0	1	2
26-50	2	2	1	5
51-75	1	4	5	10
76 and above	6	9	3	18

[a]A bank supervisor superseded the committee of management in one cooperative society; however, the usual membership is nine.

days. Nevertheless, the district cooperative central banks try to process the loan application in 15 days and return it to the cooperative society with the approved funds.

Critics of the cooperative administration have charged that the large farmers have donimated the cooperative societies' activities and have reaped the essential benefits for themselves. The composition of the management committees was an attempt to measure the influence of large farmers in administrative procedures.

The usual committee of management had nine members. Thirty of the 35 sample societies followed this pattern. In one society, the bank supervisor superseded the committee until a new committee could be elected; one society had 11 members on its committee; and three had 15 members. Small farmers were not represented on 10 of the sample societies' management committees. On six committees, small farmers were represented by only one member. Of the total sample, small farmers accounted for 29 percent of the members of management committees while large farmers accounted for 71 percent. In general, small farmers were in the minority on the management committees. This situation was expected to improve as the SFDA expanded its activities in Mysore and Bangalore districts.

Only seven of the 35 cooperatives surveyed recorded the number of small farmers in the cooperative society who received loans and the amount they received. In this sample, 46 percent of the borrowers were small farmers while 54 percent were large farmers. The small farmers received an average total loan of Rs. 674 while the others borrowed, on the average, Rs. 1,563. Small farmers received 26.8 percent

of the total credit loaned to all farmers. This was an indication of the extent to which small farmers participated in institutional credit programs.

Another method of measuring the influence of large farmers of the cooperative society is the number of overdue loans from small and large farmers. In the average cooperative, 19 small farmers had overdue loans, while 21 large farmers owed money on their crop production loans out of an average of 148 loans. On the average, the large farmers who had loans outstanding owed Rs. 17,046 to the cooperative; small farmers defaulted an average of Rs. 7,382 out of an average Rs. 24,428 overdue per society. This indicates that large farmers obtained more credit and repaid less than small farmers on the average.

The percentage of each cooperative short-term loan overdue from large farmers was a better indicator of the relative importance of farmer categories in the cooperatives' overdue statement. Large farmers owed a larger loan to the cooperative society on the average than did small farmers since crop production loans were calculated on a fixed crop and acreage basis. Details of these characteristics and the financial status of the 35 sample primary agricultural credit cooperative societies by districts are presented in Tables 5 and 6.

The interest rate charged the farmers for short-term crop production loans was either 9.0 or 9.5 percent. For the sample cooperative societies, 23 charged 9.0 percent and 12 charged 9.5 percent. Four cooperatives in Bangalore District charged 9.0 percent

TABLE 5. Financial Status--35 Primary Agricultural Credit Cooperative Societies--Three Districts of Mysore State, India, 1970-71

Item	Mysore District	Bangalore District	Mandya District	All Cooperatives
Number of short-term loans sanctioned 1970-71 crop year				
Mean	134	46	315	148
Range				
High	240	154	1,200	1,200
Low	49	2	116	2
No. of co-ops with:				
0-50	1	9	0	10
51-100	3	4	0	7
101-150	3	1	2	6
151-200	1	1	2	4
201 and above	2	0	6	8
Amount of short-term loans in Rs.[a]				
Mean	70,541	55,080	218,079	106,069
Range				
High	139,000	125,281	450,000	108,997
Low	10,400	10,935	44,200	10,400
No. of co-ops with:				
10,400-50,000	5	8	1	14
50,001-100,000	2	5	2	9
100,001-150,000	3	2	1	6
150,001 and above	0	0	6	6
Amount of short-term loans overdue in Rs.				
Mean	20,328	27,314	25,601	28,829
Range				
High	73,056	67,640	121,000	121,000
Low	0	527	2,824	0
No. of co-ops with:				
0-20,000	4	7	6	17
20,001-40,000	5	4	3	12
40,001-60,000	1	2	0	3
60,001 and above	0	2	1	3

TABLE 5 (continued)

Item	Mysore District	Bangalore District	Mandya District	All Cooperatives
Number of overdue loans				
Mean	34	24	69	40
Range				
High	116	100	420	420
Low	0	2	10	0
No. of co-ops with:[b]				
0-20	4	8	5	17
21-40	2	6	1	9
41-60	2	0	2	4
61 and above	1	1	2	4
Number of small farmers with overdue loans				
Mean	12	8	47	19
Range				
High	66	20	220	220
Low	0	0	10	0
No. of co-ops with:[b]				
0-20	5	14	5	25
21-40	0	0	2	2
41-60	0	0	1	1
61 and above	1	0	2	3
Number of large farmers with overdue loans				
Mean	19	20	22	21
Range				
High	50	80	200	200
Low	0	0	0	0
No. of co-ops with:[b]				
0-20	4	9	9	22
21-40	2	4	0	6
41-60	1	0	0	1
61 and above	0	1	1	2
Interest rate in percent				
Mean	9.00	9.36	9.05	9.17
Range				
High	9.00	9.50	9.50	9.50
Low	9.00	9.00	9.00	9.00
No. of co-ops with:				
9.0	10	4	9	23
9.5	0	11	1	12

TABLE 5 (continued)

Item	Mysore District	Bangalore District	Mandya District	All Cooperatives
Maturity period in months				
Mean	9	10	10	10
Range				
High	10	11	15	15
Low	9	7	8	7
No. of co-ops with:				
7-8	0	1	1	2
9-10	10	9	8	27
11 and above	0	5	1	6
Amount of short-term loans overdue from small farmers in Rs.				
Mean	2,825	2,064	18,472	7,382
Range				
High	13,200	8,750	72,000	72,000
Low	0	0	2,824	0
No. of co-ops with:[b]				
0-5,000	7	11	2	20
5,001-10,000	0	3	4	7
10,001-15,000	1	0	0	1
15,001 and above	0	0	4	4
Amount of short-term loans overdue from big farmers in Rs.				
Mean	14,073	25,701	7,149	17,046
Range				
High	40,556	61,610	49,200	61,610
Low	0	0	0	0
No. of co-ops with:[b]				
0-20,000	5	8	9	22
20,001-40,000	2	2	0	4
40,001-60,000	1	3	1	5
60,001 and above	0	1	0	1

[a]The 35 cooperatives surveyed granted a total of Rs. 3,712,419 in short-term credit to their respective members and had a total of Rs. 869,019 overdue from their borrowers at the time of the interviews.

[b]Values for one or more cooperatives were not available.

TABLE 6. Relationship of Overdue Loans to Farmer Categories--35 Cooperative Societies--Three Districts, Mysore State, India, 1970-71

Item	Mysore District	Bangalore District	Mandya District	All Cooperatives
Percentage funds short-term loans overdue from all farmer-borrowers				
Mean	36.2	54.4	15.2	38.0
Range				
High	100.0	100.0	58.8	100.0
Low	0.0	0.0	1.0	0.0
No. of co-ops with:				
0-25	3	2	8	13
26-50	5	5	1	11
51-75	1	3	1	5
76 and above	1	5	0	6
Percentage short-term loans overdue from big farmer-borrowers				
Mean	59.1	81.2	17.2	56.4
Range				
High	100.0	100.0	66.2	100.0
Low	0.0	0.0	0.0	0.0
No. of co-ops with:[a]				
0-25	2	2	6	10
26-50	0	0	3	3
51-75	2	0	1	3
76 and above	4	13	0	17
Percentage of total defaulters who are big farmers				
Mean	48.0	76.5	12.7	50.0
Range				
High	100.0	100.0	47.6	100.0
Low	0.0	0.0	0.0	0.0
No. of co-ops with:[a]				
0-25	2	2	7	11
26-50	2	0	3	5
51-75	1	3	0	4
76 and above	2	10	0	12

TABLE 6 (continued)

Item	Mysore District	Bangalore District	Mandya District	All Cooperatives
Percentage short-term loans overdue from small farmer-borrowers[b]				
Mean	15.8	12.1	82.7	34.4
Range				
High	46.4	100.0	100.0	100.0
Low	0.0	0.0	33.7	0.0
No. of co-ops with:				
0-25	6	14	0	20
26-50	2	0	1	3
51-75	0	0	3	3
76 and above	0	1	6	7
Percentage of small farmer-borrowers who were defaulters[a]				
Mean	23	18	87	40
Range				
High	62	100	100	100
Low	0	0	52	0
No. of co-ops with:				
0-25	4	12	0	15
26-50	1	2	0	3
51-75	2	0	3	5
76 and above	0	1	7	8
Percentage of cooperative members who received loans				
Mean	51.5	22.1	55.0	36.7
Range				
High	56.8	94.4	89.4	94.4
Low	42.4	1.9	25.2	1.9
No. of co-ops with:				
0-25	0	9	0	9
26-50	1	3	3	7
51-75	2	0	3	5
76 and above	0	1	2	3

[a]Values for one or more cooperatives were not available.

[b]Two cooperative societies were unable to report the amount of overdues attributable to the farmer categories.

and 11 charged 9.5 percent. In Mandya District, one society charged 9.5 percent and the remainder charged 9.0 percent. Bangalore District had the largest number of cooperatives which charged the higher interest rate, and it also had the highest average percentage of short-term loans overdue.

The maturity period for loans made ranged from seven to 15 months. A maturity period of 15 months applied only to sugar cane loans. The usual maturity period was nine or 10 months.

II. INDICATORS OF COOPERATIVE SUCCESS

The cooperative societies were examined according to the percentage of their short-term loans overdue as an indicator of the societies' success and were classified according to the percentage of their 1970-71 crop loan overdue to the financing agency. By definition, this sub-sample is an indication of "good," "poor," and "very poor" operation of the cooperative societies. A good cooperative operation had a low percentage of crop loans overdue, while poor and very poor operations had medium and high percentages overdue, respectively. The rationale for classifying cooperative societies according to the percentage of their crop production loan overdue lies in the regulations governing the cooperatives. Before a primary agricultural credit cooperative can receive additional funds for crop production loans, it must recover at least 50 percent of the previous loans. However, in areas where the crop yields are below normal, the cooperative central banks may grant additional finance to societies whose recoveries are up to 25 percent, provided action has been taken by

the committees of management of the societies against the defaulting members.[2] Commercial banks which are financing cooperative societies usually insist upon 100 percent repayment of crop loans before granting a new crop production loan to the cooperative society. Under most circumstances, the ability of the management committees to force defaulters to repay their loans was limited to moral persuasion.

Certain similarities existed among the cooperatives classified in the good, poor and very poor groups. For example, the values in each group for the variables--years of education of the paid secretary, the time gap for every loan application, and the percentage of directors of the management committee who are large farmers--are about the same. The amount of short-term loans overdue from all farmers increased dramatically from the low or good group to the high or very poor group. Large farmers showed the same relationship. The average short-term loan overdue from large farmers increased from Rs. 3,607 in the low group to Rs. 26,333 in the high percentage group. This is an indication that the large-farmer defaulters are a contributing factor in the cooperative societies' overdue position.

The percentage of total defaulters who were large farmers increased from the low to high group. Also, in all groups, the large farmers accounted for more than 70 percent of the directors of the management committees. Officials in the cooperation department contended that big farmers have controlled the cooperative societies through their membership on the committees.

[2]The Mysore State Co-operative Union, Ltd., Proceedings of the

Data on the sample cooperative societies were classified also according to percentage of their short-term loans overdue, as presented in Table 7. The amount of short-term loans overdue from the large farmers on the average increased from Rs. 3,607 for cooperatives with less than 25 percent of their short-term loans overdue to Rs. 26,333 for cooperatives with more than 51 percent overdue. The amount of short-term loans overdue from the small farmers indicated an opposite relationship. In the low category, small farmers owed Rs. 7,271, on the average; while small farmers in those cooperatives with a high percentage of overdues owed Rs. 6,523. The average percentage of all defaulters who were large farmers was 16.3 in the low class and 69.4 and 67.0 in the medium and high categories, respectively.

The interest rate which cooperative societies charged the farmers showed an important relationship to the classification of cooperative societies according to the percentage of their short-term loans overdue. In the lower category, 12 societies charged 9.0 percent, while only one society charged the higher rate. In the higher overdue category, three cooperative societies charged 9.0 percent and eight societies charged 9.5 percent.

In both the medium and high groups, eight of the 11 cooperatives in each group had more than 75 percent of their short-term loans overdue from big farmers. In contrast, the amount of short-term loans overdue from small farmers was approximately the same for all

Conference Held From June 7 to 9, 2nd Mysore State Co-operative Conference, 1968, Mandya (Bangalore: Karnataka Co-operative Publishing House, Ltd., November, 1968), p. 32.

TABLE 7. Average Characteristics of Cooperative Societies Classified According to Percentage of Short-Term Loans Overdue--35 Cooperative Societies--Three Districts, Mysore State, India, 1970-71

Item	Low 0-25% (13 co-ops)	Medium 26-50% (11 co-ops)	High 51-100% (11 co-ops)	All (35 co-ops)
	Average per cooperative			
Number of members in the cooperative society	443	451	277	390
Percentage of members who borrowed short-term loans from the cooperative	48	36	23	36
Interest rate in percent	9.03	9.13	9.36	9.17
Members' share capital in Rs.	47,421	28,667	16,354	31,763
Number of short-term loans in 1970-71 crop year	191	183	62	148
Amount of short-term loans in Rs.	163,093	102,791	41,954	106,069
Number of overdue loans	20	65	40	40
Amount of short-term loans overdue in Rs.	10,878	32,260	32,856	24,428
Amount of short-term loans overdue from small farmers in Rs.	7,271	8,374	6,523	7,382

TABLE 7 (continued)

Item	Low 0-25% (13 co-ops)	Medium 26-50% (11 co-ops)	High 51-100% (11 co-ops)	All (35 co-ops)
	Average per cooperative			
Amount of short-term loans overdue from big farmers in Rs.	3,607	23,886	26,333	17,046
Percentage short-term loans overdue from small farmers[a]	66.0	26.0	20.0	34.0
Percentage of total defaulters who are big farmers[b]	16.3	69.4	67.0	50.0
Percentage of short-term loans overdue from all farmer-borrowers	8.4	33.8	77.2	38.0
Percentage of short-term loans overdue from big farmers	33.0	74.0	80.0	66.0
Percentage of directors of the committee of management who are large farmers	72	72	70	71
Time gap for average loan application between receipt and sanction by District Central Cooperative Bank in days	24	20	20	21

TABLE 7 (continued)

Item	Low 0-25% (13 co-ops)	Medium 26-50% (11 co-ops)	High 51-100% (11 co-ops)	All (35 co-ops)
	Average per cooperative			
Years of education of the paid secretary	11	11	10	10
Travel time from village to cooperative society in minutes	61	121	57	79

[a]Two cooperative societies were unable to report the amount of overdues attributable to the farmer categories.

[b]Values for one or more cooperatives were not available.

groups. This is a further indication that the problem of cooperative overdues lies with large farmers. The frequency distribution of the factors affecting the cooperative societies' overdue position is found in Table A-1 in Appendix A.

These implications are examined in an analysis of the individual farmer's resources, crop production system, and indebtedness position in the following chapters. The aggregate data for the 35 cooperative societies provide an indication of the relative importance of the factors which influence the success or failure of the short-term crop production loan system. For example, there is a strong indication that the interest rate charged on crop production loans affects the cultivator's ability to repay that loan. In addition, the farm size may affect the performance of the short-term loan system. These and other variables will be examined in the following chapters to determine what factors are associated with the farmer's ability to repay crop production credit.

CHAPTER IV

MYSORE FARMERS - THEIR BORROWING PRACTICES AND PROBLEMS

Data for a sample of 136 farmer-member-borrowers of 35 primary agricultural credit cooperative societies in Bangalore, Mandya, and Mysore Districts of Mysore State, India, were obtained through interviews with the farmers between May and July, 1972. The data relate to the 1970-71 crop production year and the status of the cultivator at the time of the interview, based on the cultivator's recall. Records of the cooperative societies supplied information about size and disposition of crop production loans. Publications and records of government agencies and commercial banks provided additional information about agricultural production and marketing activities in the three districts. In addition, knowledgeable officials of governmental agencies, commercial banks, cooperative banks, and the Cooperation Department provided further insights into the cultivators' borrowing practices and problems.

A purposeful sample survey of farmers owning land and borrowing short-term loans from cooperative societies in the three districts was conducted. This sample of 136 farmers represented less than 1 percent of the 345,142 members of all agricultural credit cooperatives in Mysore State, and approximately 1.5 percent of the members of the 35 selected cooperatives.

The paid secretaries of the cooperatives informed their committees of management and member-borrowers of the time of the interview and its purpose at least two days in advance. If for some reason these members were not available for the interview, other member-borrowers were selected from the society's record of borrowers during the interview with the paid secretaries, and these farmers were asked to come to the cooperative society. These respondents included both small and large farmers as defined in Chapter I.

Observations from the sample farmer-borrowers were classified according to farm size and on the basis of their repayment of their crop production loans for 1970-71. Defaulters were defined as farmers who had received a crop production loan and who had not repaid their loans plus interest prior to the due date. Non-defaulters were defined as borrowers who had repaid their crop production loan plus interest on time, and they were therefore eligible for new crop production credit during the next season. Defaulters were ineligible for new credit unless unusual circumstances warranted the conversion of their short-term crop production loans into medium-term loans. This breakdown of farmer-borrowers has facilitated the comparison of farmer resources, cropping patterns, and borrowing practices and problems. Frequency distribution and ranges of various characteristics of the farmer-borrowers by districts and farm size are presented in Table A-2 in Appendix A.

I. GENERAL FEATURES OF THE SAMPLE FARMS

Averages regarding the farmers' age, education, family size,

resource position, gross output, and income are presented by farm size in Table 8. The average age for all farmers was about 45 years with a range from 25 to 75 years. There were at least 19 active farmers 60 years and older. While the average education was 4.3 years, 36 small farmers and 12 large farmers had no formal education. Most of the six farmers with college educations were lawyers or high school principals. When all children, adults, and permanent servants were included as consuming members of the household, the average family contained nine members with a range from two to 36 members. Only 17 percent of the small farmers had servants while 68 percent of the large farmers had permanent servants.

Assets

The value of assets represents the total amount of capital committed to farming. The average value based on present market price of all land owned for all farmers was Rs. 35,950. Farmers reported the present value of an acre of irrigated land at about Rs. 9,052. Irrigated land was classified for this study as land that received sufficient water for paddy from channels, rivers, or tanks (ponds). Light irrigated acres included land that received water from wells utilizing pumpsets or traditional methods (shadoof). Light irrigated acres cost about Rs. 4,065 per acre. Rainfed land was less expensive and cost about Rs. 1,743 per acre. Dry lands had often been converted into light irrigated lands by sinking wells, thereby increasing the value of the land and its productivity.

The farmers' assets in livestock included the current farm-level value of bullocks, milch cows, buffaloes, sheep, goats,

TABLE 8. Average Resource Levels--By Farm Size--136 Farms in Three Districts--Mysore State, India, 1970-71

Item	Mysore District		Bangalore District		Mandya District		All Farms	
	Small (28)[a]	Large (13)	Small (23)	Large (36)	Small (20)	Large (16)	Small (71)	Large (65)
Age of farmer in years	43.1	40.7	49.2	48.0	45.8	38.6	45.8	44.3
Education of farmer in years	2.5	6.1	2.6	6.2	3.4	5.3	2.5	5.9
Size of household								
Males	3.6	5.0	5.1	4.8	4.0	4.7	3.6	4.9
Females	3.4	4.4	3.5	4.9	2.8	3.0	3.2	4.4
Permanent servants	0.2	1.5	0.6	1.7	0.2	2.3	0.3	1.8
Land owned in acres								
Irrigated	1.7	6.0	0.7	4.4	1.0	3.5	1.2	4.5
Light irrigated	0.0	0.5	0.4	0.9	0.0	0.2	0.3	0.7
Rain fed	0.6	3.8	2.4	13.0	1.9	7.5	1.5	9.8
Land rented in acres	0.3	0.0	0.8	0.3	0.5	0.4	0.5	0.3
Assets owned in Rs.								
Land	25,843	80,904	9,757	61,291	11,257	28,613	16,523	57,170
Livestock	935	2,238	1,246	4,455	871	2,527	1,023	3,538
Equipment	293	991	302	1,036	300	528	298	902
Household utensils	335	1,349	251	1,326	445	613	33	1,155
Grain	148	831	293	1,279	259	238	226	933
Currently financed investments in Rs.	3,314	10,751	2,000	8,362	350	3,384	2,059	7,615

TABLE 8 (continued)

Item	Mysore District		Bangalore District		Mandya District		All Farms	
	Small (28)[a]	Large (13)	Small (23)	Large (36)	Small (20)	Large (16)	Small (71)	Large (65)
Annual family living expenses in Rs.								
Festivals	409	1,173	260	985	519	720	392	958
Education	302	1,961	589	937	249	259	380	975
Other expenses	444	1,247	269	1,471	373	923	367	1,291
Short-term loan in Rs.	626	1,856	820	3,104	642	983	694	2,320
Acres in crop production	2.5	7.4	3.9	13.5	3.5	8.7	3.2	11.1
Operating expenses in Rs.	1,112	3,068	926	3,928	442	1,645	863	3,194
Gross farm output in Rs.	2,565	9,599	1,457	6,216	1,495	4,148	1,905	6,384
Net output per acre in Rs.[b]	512	907	95	148	372	315	337	340
Annual farm income in Rs.	1,556	7,264	713	4,010	790	2,788	1,018	4,360
Annual nonfarm income in Rs.	219	346	586	723	275	174	354	512

[a]Number of farms surveyed.

[b]Net output per acre for small farmers ranged from Rs. 2,593 to Rs. -6,948.

pigs, and chickens. In general, all farmers owned at least a pair of bullocks with an average value of Rs. 918. Native milch cows cost, on the average, about Rs. 504. Crossbred milch cows cost about Rs. 2,000, according to the Bangalore District SFDA Project Officer whose agency was helping small farmers to purchase milch cattle. Cooperative societies were granting medium-term loans for the purchase of crossbred cows. Buffaloes were widely used for milk production and, on the average, cost about Rs. 355. The average value of all other livestock per farmer including sheep, goats, pigs, and chickens was Rs. 119.

The sample farmers' assets in non-power implements consisted of iron and wooden plows, bullock carts, and hand tools. On the average, farmers owned two wooden plows and one iron plow, one cart, and seven hand tools for a total value of Rs. 586 based on their estimation of the equipment's current market value if sold used. The average value of used wooden plows was Rs. 6 and iron plows about Rs. 38. New wooden and iron plows cost about Rs. 20 and Rs. 50, respectively. Used bullock carts were valued at about Rs. 640.

The farmers' assets in household utensils and grain stocks consisted of water jugs, pots and pans, and miscellaneous objects. Grain stocks consisted of paddy, ragi, and other food grains kept for home consumption or seed. On the average, farmers owned Rs. 729 worth of household utensils and Rs. 564 in grain valued at the market price at the time of the interview which was just prior to the planting season. In the sample, 33 small farmers and 12 large farmers did not have any grain stocks.

Buildings could have been included in the current value of assets at the farm level. However, since the author was told that Mysore villagers bought and sold houses only in cases of extreme indebtedness, the salvage or sale value of buildings was excluded from this list of assets. At the same time, cooperatives, commercial banks, and the SFDA were encouraging farmers to borrow money for cattle sheds and milking parlors, so the value of these buildings was included in currently financed investments.

Investments

In this analysis currently financed investments represents the actual amount spent including interest, regardless of the source of finance, on the aquisition of land and its improvements, new wells and irrigation works, purchase of pump sets and installation, farm machinery, buildings, and the purchase of livestock.

Long-term loans from primary land development banks financed wells and pump sets. According to officials at the Bangalore District North Taluk Primary Cooperative Land Development Bank, the cost of a 3 h.p. electric pump set was about Rs. 2,500, and the expense of installation and construction of a pump house was about Rs. 1,000. A 5 h.p. electric pump set costs Rs. 500 more than the small sets. Diesel pump sets were more expensive and cost about Rs. 5,000.

Farm machinery included power tillers, cultivators and tractors. Less than 40 percent of the farmers in the sample invested in power equipment.

Livestock included the purchase of milch cows, pigs, sheep, and

chickens. Mysore farmers often attended bullock fairs where they traded draft animals; however, the net gain or loss in this activity was not recorded. In the case of a new pair of bullocks, this expense was included as a currently financed investment.

In the sample, 42 small farmers and 19 large farmers did not have any investments for which repayments were still owed. The average currently financed investment per farmer was Rs. 4,712. New wells and irrigation works accounted for 40 percent of the farmers' average investment, land purchase for 27 percent, and pump sets for 19 percent. Livestock and machinery investments made up the remainder.

Expenses

Annual family living expenses beyond farming activities included expenditures for education and religious festivals during the year. Expenses of marriages, births, deaths, and litigation during the previous five years were recorded, and then averaged and included as yearly consumption expenses. Data on these consumption expenditures have some limitations since they were obtained on a recall basis. According to cooperative officials, farmers sometimes exaggerate their expenditures on marriages and births to impress their peers. These expenses represent a diversion of capital from productive assets into consumption items.

Short-term loans were defined as the amount of credit that farmers received from cooperative societies for crop production purposes. These loans included the amounts the farmers received in cash and kind. The cash portion of the loan was intended to cover labor, seeds, and

other costs of production. The kind portion consisted of chemical fertilizers allotted according to the type of crop produced.

Operating expenses comprised the farmers' cash costs of production for all crops produced in 1970-71. These expenses included hired labor, seeds, water, farm yard manure, chemical fertilizer, and plant protection. This variable was an indication of the intensity of input use in crop production.

Output and Income

Cross farm output was the sum of all the receipts from the sale of crops, livestock, and livestock products, plus output consumed by the farm family. Receipts from the sale of crops included grain and by-products such as straw and fodder. Only a very few farmers reported any sales of livestock such as sheep, goats, or chickens and by-products such as milk, eggs, or meat. Output consumed by the farm family was the value of grain and by-products calculated at the same prices as the marketed portion of these crops.

Net output per acre was calculated by subtracting the cash costs of production from the gross farm output and dividing by the acres in crop production. Because of natural calamities and other unexpected contingencies, 35 small farmers and 13 large farmers had net losses per acre. The range of net losses per acre for all farmers went from minus Rs. 37 to minus Rs. 6,548. The apparent reasons for these losses are discussed in other sections of this study.

Annual farm income included only the value of grain, straw, livestock, and livestock products sold in the market. The sale of grain

comprised the major portion of the farmers' annual incomes. Twenty-six small farmers and one large farmer reported that they did not have any income from the sale of agricultural products.

Non-farm activities supplemented 37 percent of the farmer's incomes and provided additional employment in slack seasons. Public works projects furnished less than 10 percent of the farmers with non-farm employment. Other farmers were employed as village blacksmiths, coolies, or performed religious ceremonies.

Sources of Credit

In the three districts surveyed, the major sources of agricultural credit were commercial banks, agricultural credit cooperatives, branches of the Mysore State Cooperative Land Development Bank, and the non-institutional sources of credit--moneylenders, traders, and merchants. The primary agricultural credit cooperative societies provided short and medium-term credit, and the primary land development banks supplied long-term credit. Non-institutional sources furnished credit to the farmers for marriages, house construction, land purchase, and a wide variety of other purposes. Since the role of commercial banks and primary credit cooperatives in supplying credit has been discussed in Chapter III, this section emphasizes land development banks and moneylenders as additional credit sources.

Long-term credit reflected the cultivators' need for extensive improvements in their productive assets. In recent years, the Mysore State Co-operative Land Development Bank has approved credit for land improvement, purchase of tractors and power tillers, well construction

and pump sets, and prior debt discharge. The bank has granted loans for a period of seven to 15 years and charged 9 percent interest to the borrower.[1] The cultivator's loan eligibility depends upon his security and the purpose of the loan. Well construction and the purchase of pump sets were the most frequent investments made by the farmers surveyed.

The cultivator's credit limit for well construction has been 50 percent of the cost of the well, plus 500 times the land tax subject to a minimum of Rs. 200 and a maximum of Rs. 1,500 per acre. Long-term loans for well construction were disbursed in three installments of 40, 40, and 20 percent for a duration of up to 10 years.

Pump set loans have been granted on the same basis as well construction except that the credit limit was 100 percent of the valuation of land revenue and the cost of the pump. The maximum loan for diesel engine sets has been Rs. 4,000 and Rs. 2,500 for the electric sets. Also, loans have been available up to Rs. 1,000 for the cost of building a pump house. The duration of pump set loans has been eight years.

Funds have been available through the Mysore State Land Development Bank to provide electric power to the pump set whereby the loanee deposits Rs. 3,000 with the Mysore State Electricity Board. A special feature of the pump set loan scheme has been that the farmer selected the manufacturer and the dealer he wanted. After delivery of the pump set to the farmer, the land development bank disburses payment directly to the dealer.

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[1] The Mysore State Co-operative Land Development Bank,

The applicant's initial cost of long-term credit represents a significant investment. In the first step, the cultivator purchases a Rs. 10 share in the cooperative land development bank, pays a Rs. 1 admission fee, and a Rs. 0.25 share fee. Once the cultivator has paid these membership fees, he is eligible for a loan. The loan application fee and other associated costs are as follows: loan application, Rs. 1; Incumbrance Certificate, Rs. 12; investigation fee, Rs. 15 for loans below Rs. 5,000 and Rs. 17.50 for larger loans; building fund, Rs. 5; and travel costs of Rs. 3.[2] The total initial cost of long-term credit is approximately Rs. 47.25 for a loan below Rs. 5,000 and Rs. 49.75 for larger loans.

Officials of the Bangalore North Taluk Primary Cooperative Land Development Bank reported that approximately 7 percent of their loans were overdue. The major reasons these officials gave for the farmers' inability to repay their long-term credit were drought, failure of water in the wells, lack of credit-worthiness, and crop failure.[3]

In the author's survey, moneylenders, relatives, and friends provided credit to 63 of the 136 farmers during the last five years. The size of the loans ranged from Rs. 100 to Rs. 16,000 for small farmers and Rs. 500 to Rs. 20,000 for large farmers. A few farmers had more than one loan from non-institutional credit sources. Purposes

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Ltd. (Bangalore: The Mysore State Co-operative Land Development Bank, Ltd., 1972), p. 3.

[2]Interview with the Secretary and staff of the Bangalore North Taluk Primary Cooperative Land Development Bank, at Bangalore, May 5, 1972.

[3]Ibid.

of these loans included 27 for marriages, five for education, eight for livestock, 12 for land purchases, 12 loans for living expenses, and 27 loans for other uses. The interest rate charged on these loans ranged from 12 to 24 percent. The legal rate for moneylenders was 12 percent on secured loans and 15 percent on unsecured loans.

Since officials from the cooperative banks were usually present during the interviews, moneylenders and large farmers were exceedingly cautious about discussing their lending activities. Among the farmers interviewed, only two admitted that they were moneylenders, and they were reluctant to discuss their lending activities, apparently because moneylending without a permit was illegal. On one occasion in Bangalore District, a moneylender and his client, who was a member of the cooperative society and a defaulter, were present during the interview of the cooperative's borrowers. The moneylender supplied information about his client's indebtedness, since the borrower could not remember the amount or the terms of his loans. A large part of the information about farmers' non-institutional borrowings may be omitted unless farmers are questioned very closely.

The major sources of credit, as shown in Table 9, were the primary land development banks, primary agricultural credit cooperatives, and moneylenders, since the commercial banks were not very active in the agricultural sector of these districts. The agricultural cooperatives' larger role in furnishing credit to farmers with loans reflected the rapid expansion of the cooperative credit movement in the last few years, and the emphasis of special agencies, such as the SFDA, on helping small farmers to obtain credit. As had been anticipated,

TABLE 9. Sources of the Average Farmer's Outstanding Loans--By Farm Size--136 Farms in Three Districts--Mysore State, India, 1970-71

Source	Mysore District				Bangalore District				Mandya District			
	Small (28)[a]		Large (13)		Small (23)		Large (36)		Small (20)		Large (16)	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
PLDB	42	1	1,062	38	681	42	2,353	33	349	20	984	24
Cooperatives (short-term loans)	434	11	947	34	552	33	2,098	29	518	29	689	17
Commercial banks	0	0	0	0	141	8	488	7	0	0	1,572	38
Moneylenders, relatives and friends	3,390	88	807	28	287	17	2,225	31	917	51	906	21
Total	3,866	100	2,816	100	1,661	100	7,164	100	1,784	100	4,151	100

[a]Number of farms surveyed.

unorganized credit sources supplied most (88 percent) of the average small farmer borrowings in Mysore District. Since 14 of the 23 small farmers in Bangalore District reported that they did not have any loans from moneylenders, the percentage of average borrowings from unorganized credit sources was quite low. Nevertheless, as previously mentioned, there was ample evidence that moneylenders were actively supplying credit to farmers, such as the presence of moneylenders at the interviews with farmers in that district.

Even though there was considerable fluctuation in the percentage of average borrowings from moneylenders among small farmers in the three districts, the percentage of average borrowings from moneylenders for all farmers was 66 percent, which was as had been anticipated based on the reports of other observers. The percentage of average borrowings for all small farmers from the other sources were respetively: PLDB, 13 percent; cooperatives, 19 percent; and commercial banks, 2 percent.

As had been anticipated, large farmers had a greater percentage of their total outstanding credit from cooperatives. The percentage of average borrowings for all large farmers were respectively: PLDB, 32 percent; cooperatives, 27 percent; commercial banks, 12 percent; and moneylenders, 29 percent. Since the PLDB was a special cooperative which furnished mostly long-term credit, large farmers were able to qualify, on the average, for a lot more credit from institutional sources than were small farmers and, therefore, they reaped the benefits of cooperative credit.

II. GENERAL FEATURES OF DEFAULTERS AND NON-DEFAULTERS

This section, using cross-tabulation analysis, examines the relationship between farmers' characteristics and the repayment status of their crop production loans. Some of these variables, which are defined uniformly throughout the text, are used in an ordinary least squares regression model in Chapter VI to refine further the analysis of factors associated with repayment of crop production loans. As further insight, farmers' stated reasons for their inability to repay their crop loan are presented in Chapters V and VI.

Averages concerning the farmers' age, education, family size, resource position, gross output, and income are presented by farm size for defaulters and non-defaulters in Table 10. Both small and large farmers who were defaulters were, on the average, older than non-defaulters. Small farmers, both defaulters and non-defaulters, had less education than large farmers. Defaulters in both categories had fewer members in their households, but also fewer assets to support their families and servants than non-defaulters. Defaulters owned fewer acres of irrigated land, had fewer acres in crop production, and less gross farm output, and consequently, less farm income than non-defaulters. A higher annual non-farm income for defaulters in both categories was attributed to their need to supplement their incomes from farming. The farmers' assets, investments, living expenses, income, indebtedness, and other variables are examined in greater detail in the next section in order to establish an association between rescurces and indebtedness. Frequency distribution and ranges of

TABLE 10. Characteristics of the Average Defaulter and Non-Defaulter--By Farm Size--136 Farms in Three Districts--Mysore State, India, 1970-71

Item	Small		Large	
	Defaulter (56)[a]	Non-Defaulter (15)	Defaulter (49)	Non-Defaulter (16)
Age of farmer in years	46.1	43.8	44.8	42.3
Education of farmer in years	2.7	3.2	6.1	5.6
Size of household				
Males	3.4	3.9	4.8	5.2
Females	3.1	3.8	4.1	5.1
Permanent servants	0.4	0.2	1.6	2.7
Land owned in acres				
Irrigated	1.2	1.5	3.5	7.3
Light irrigated	0.2	0.1	0.8	0.4
Rain fed	1.3	2.4	9.6	10.5
Land rented in acres	0.5	0.7	0.3	0.1
Assets owned in Rs.				
Land	16,245	17,560	50,079	78,888
Livestock	904	1,467	3,064	4,989
Equipment	244	498	827	1,124
Household utensils	229	750	1,036	1,520
Grain	140	547	778	1,407
Currently financed investments in Rs.	2,290	1,170	7,906	6,725
Annual family living expenses in Rs.				
Festivals	416	302	888	1,172
Education	431	188	960	1,018
Other expenses	393	270	1,103	1,866
Short-term loan in Rs.	751	479	2,566	1,517
Acres in crop production	2.8	4.6	10.1	14.0
Operating expenses in Rs.	848	920	3,066	3,584

TABLE 10 (continued)

Item	Small		Large	
	Defaulter (56)[a]	Non-Defaulter (15)	Defaulter (49)	Non-Defaulter (10)
Gross farm output in Rs.	1,715	2,616	5,872	7,950
Net output per acre in Rs.	325	381	325	387
Annual farm income in Rs.	962	1,459	4,185	4,896
Annual nonfarm income in Rs.	432	65	596	256

[a]Number of farms by size.

various characteristics of the farmer-borrowers by farm size, defaulters and non-defaulters, are presented in Table A-3 in Appendix A.

Assets

Small farmers who were defaulters had fewer assets in land, livestock, equipment, and grain stocks than non-defaulters. Sixteen of the 56 small farmer defaulters had no irrigated land, and 23 had no dryland. Since 28 small farmer defaulters owned less than Rs. 10,000 in land, the value of their real estate was quite low. In Mandya District, one small farmer owned Rs. 180,000 in land; however, this case was not irregular since irrigated land was intensively developed in that district and very expensive.

With the exception of eight small farmer defaulters, all small farmers owned some livestock. These eight farmers were at a disadvantage, since they were forced to hire bullocks for plowing or till their land with hand tools. In addition, these farmers had no other livestock.

Small farmer defaulters owned few assets in equipment, grain stocks, and household utensils which they could sell if they were forced to meet their financial obligations to the cooperatives. Approximately 79 percent of these farmers had less than Rs. 500 worth of equipment; 89 percent had less than Rs. 500 in grain stocks; and 95 percent had less than Rs. 500 in household utensils. The farmers' poor asset base signified that they could not disinvest very much to meet financial obligations. Indeed, 62 percent of the small farmer defaulters did not have any grain stocks to sell. In the case of

farmers with grain stocks, this represented an asset easily convertible into cash to meet financial obligations.

Investments

Currently financed investments represented a financial liability to the farmer's credit sources and claims upon a portion of his income. Defaulters in both categories had larger average current investments than did non-defaulters. However, 57 percent of the small farmer defaulters had no investments while 67 percent of the non-defaulters reported none. More large farmers in both groups had investments; 80 percent of the defaulters and 69 percent of the non-defaulters had invested in either land, wells, pump sets, equipment, or livestock.

Annual Family Living Expenses

Annual family expenses for festivals, education, marriage, birth, death, and litigation represented a large claim on the farmers' gross farm output. Small farmer defaulters in the sample spent, on the average, 24 percent of the gross farm output on festivals while non-defaulters spent 12 percent. Large farmers in both categories spent 15 percent of their output on festivals. Other expenses in the form of marriages, births, deaths, and litigation were collected and totaled for the last five years and averaged to give an annual expense for the four items. Small farmer defaulters spent 23 percent of their annual output on these activities, while non-defaulters spent only 10 percent. In the case of the large farmers, the reverse was true; defaulters used up 19 percent of their annual output on other expenses, while non-defaulters spent 23 percent on these activities.

Marriages comprised a large amount of the farmers' living expenses, and observers[4] have claimed that cultivators' extensive expenditures on marriages were one of the major reasons for Indian peasants' heavy indebtedness. In the previous five years, 33 small farmers and 49 large farmers in the sample had celebrated or paid for marriages. In the absence of well kept records, five years was the maximum period for which reliable records based on farmers' recall could be obtained. Small farmers spent on any one wedding an average of Rs. 2,571, with a range from Rs. 550 to Rs. 10,000. The average small farmer defaulter spent a total of Rs. 2,450 on marriages while the non-defaulter spent Rs. 3,250 on marriages during these five years. Large farmers had higher average expenditures on this activity: Rs. 7,363 for all farmers, Rs. 6,386 for defaulters, and Rs. 10,375 for non-defaulters. Their total marriage costs during the five years ranged from Rs. 500 to Rs. 40,000.

Moneylenders supplied 10 small farmers and 12 large farmers with funds for marriages. Other farmers in the sample either financed marriages out of their own funds or sold assets to cover the costs. A few

[4]The argument that improvidence and debt were intricately connected for the Indian peasant was first mentioned in M. L. Darling's The Punjab Peasant in Prosperity and Debt (London: Oxford University Press, 1926). Subsequently, authorities have repeated the same theme; however, P. G. K. Panikar has rejected their argument. He contended that "compared with the orgy of lavishness on Christmas or New Year's Day in the West, the extravagance of the Indian peasant is nothing but puritanical austerity." In an analysis of secondary data, he calculated the percentage of total farm family expenditures attributed to ceremonies in India at only 7.21 percent in 1949-50. See P. G. K. Panikar, "The Burden of Debt in Indian Agriculture," Journal of Farm Economics, XXXXV, No. 1 (February, 1963), p. 203.

farmers admitted that they diverted short or medium-term loans from the cooperatives to finance marriage expenses and thus were unable to repay their loans. In general, for the sample farmers, marriage expenses constituted a major cause of heavy indebtedness. Even though farmers spent large sums on marriages, these activities play a very important role in the Indian cultivators' life cycle and should be evaluated in that light.

Income

The cultivators' incomes were apparently an important determinant of their ability to repay their crop production loans. Of the 56 small farmer defaulters, 25 did not market any farm produce, and 15 did not have a positive net output per acre. Only five large farmer defaulters failed to sell some farm produce, and 13 suffered a loss in net output per acre. Under these circumstances, many farmers were unable to meet their financial obligations to the cooperatives.

Some farmers supplemented their agricultural incomes with non-farm employment in public works projects, small blacksmith shops, and other subsidiary occupations. In the small farmer category, 50 percent of the defaulters and 80 percent of the non-defaulters did not have non-farm incomes. Large farmers followed a similar pattern of non-farm employment--65 percent of the defaulters and 74 percent of the non-defaulters did not have non-farm employment. On the average, defaulters in both categories had higher non-farm incomes than non-defaulters. Since defaulters in both categories had, on the average, less farm income than non-defaulters, this suggests that defaulters needed to supplement their agricultural activities with other employment.

An indication of the farmers' utilization of their crops can be found in Tables 11 and 12. For example, small farmer defaulters, on the average, consumed a larger percentage of their paddy crop than non-defaulters. The same situation held for the other food crops such as ragi and jowar. Consequently, if farmers consumed their harvests, they would not have any income with which to repay their loans.

Indebtedness

A summary of the credit outstanding of the 136 farmers at the time of the interviews, grouped by farm size and default position, is presented in Table 13. The purposes for which credit was extended to farmers by land development banks, cooperatives, and commercial banks have been discussed in the previous sections. Moneylenders offered credit for marriages, education, land, livestock, consumption (food, other necessities), and for many other reasons. Moneylenders had financed marriages for nine small farmer defaulters and 11 large farmer defaulters, and they had financed 14 small farmer defaulters for purchases of land, livestock, and consumption, and for a wide variety of other purposes. One small and one large farmer in the non-defaulter groups also received credit for marriages. Nine non-defaulters in both categories received credit from moneylenders for other purposes.

Further analysis of the survey results shows that small farmers, defaulters and non-defaulters respectively, had 113 and 103 percent of their average loans from moneylenders still outstanding. This indicates that they were not repaying the principal, and in some cases, not even

TABLE 11. Crop Production Costs and Returns Per Acre--71 Small Farms--Defaulters and Non-Defaulters in Three Districts--Mysore State, India, 1970-71

Crop	Defaulters				Non-Defaulters			
	Net Income	Cash Cost of Production	Net Income Per Rupee of Cash Cost	Percentage of Crop Consumed	Net Income	Cash Cost of Production	Net Income Per Rupee of Cash Cost	Percentage of Crop Consumed
	---------- Rupees ----------				---------- Rupees ----------			
Paddy	412	350	1.17	85	483	253	1.90	69
Ragi	75	141	0.53	99	169	94	1.79	92
Jowar	212	79	2.68	100	244	58	4.20	75
Maize	323	315	1.02	34	624	311	2.00	50
Sugar cane	1,528	869	1.75	0	2,129	728	2.92	0
Groundnut	92	84	1.09	0	209	159	1.31	0
Other crops	52	338	0.15	80	535	220	2.43	50

TABLE 12. Crop Production Costs and Returns Per Acre--65 Large Farms--Defaulters and Non-Defaulters in Three Districts--Mysore State, India, 1970-71

Crop	Defaulters				Non-Defaulters			
	Net Income	Cash Cost of Production	Net Income Per Rupee of Cash Cost	Percentage of Crop Consumed	Net Income	Cash Cost of Production	Net Income Per Rupee of Cash Cost	Percentage of Crop Consumed
Paddy	398	320	1.24	63	397	336	1.18	64
Ragi	72	124	0.58	85	104	135	0.77	87
Jowar	61	239	0.30	60	83	83	1.00	100
Maize	406	325	1.25	23	212	290	0.73	0
Sugar cane	2,461	956	2.57	0	1,586	620	2.56	0
Groundnut	397	137	2.90	29	-6	69	-0.09	27
Other crops	110	642	0.17	43	286	376	0.76	51

TABLE 13. Average Farmer Indebtedness by Source, Amount Outstanding, and Percentage of Average Debt Outstanding--By Farm Size--Defaulters and Non-Defaulters--Mysore State, India, 1970-71

Source	Small				Large			
	Defaulters (56)[a]		Non-Defaulters (15)		Defaulters (49)		Non-Defaulters (16)	
	Amount[b]	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage
PLDB	395	13	112	18	1,928	28	1,237	65
Cooperatives (short-term loans)	628	20	0	0	2,018	30	0	0
Commercial banks	58	2	0	0	850	13	69	4
Moneylenders, relatives and friends	2,005	65	505	82	1,951	29	593	31
Total	3,086	100	617	100	6,748	100	1,899	100

[a]Number of farms surveyed.

[b]Amount in rupees.

the interest on their credit from these sources. Large farmers, defaulters and non-defaulters respectively, had 103 and 95 percent of their average loan outstanding from moneylenders. Although most of the farmers surveyed contended that they paid both interest and principal on their loans from moneylenders, the data indicate that their annual income was so low that they were not repaying the principal.

Defaulters, small and large farmers, had 84 and 79 percent of their average short-term loans outstanding. Small farmer defaulters gave the following responses as the major reasons for their outstanding short-term loans: 24, drought; 3, fall in agricultural prices; 3, limited resources; and 23, other reasons such as death in the family, sickness, and accidents. In some cases, a combination of factors contributed to the cultivators' inability to repay their crop production loans. Cooperatives were in the process of taking legal action against 24 of these defaulters. Twenty-three large farmer defaulters claimed that drought was the major reason for their outstanding crop production loans, 3 claimed floods, 17 gave other responses, and 6 gave no reason for their defaults.

Summary

The data described in this chapter bring out the following points: 1) Small farmer defaulters owned fewer assets in land and livestock than non-defaulters. 2) These defaulters had fewer movable assets in equipment, grain stocks, and household utensils which they could sell if they were forced to meet their financial obligations.

Approximately 39 percent of this group had more than Rs. 500 in short-term loans outstanding. 3) Defaulters in both categories had larger average current investments than did non-defaulters. These investments presented additional financial claims upon the cultivators' income. 4) Small farmer defaulters spent a much higher percent of their income than did small farmer non-defaulters for annual family living expenses, but there was little difference between larger farmer defaulters and non-defaulters. 5) The farmers' low income and the high percentage of their harvest utilized for home affected their ability to repay crop production loans. 6) Farmers' indebtedness to non-institutional credit sources affected their ability to repay the cooperatives. 7) Finally, their inability to meet their financial responsibilities was felt by many defaulters to be a direct result of drought, other natural calamities, and personal misfortunes. These preliminary conclusions regarding production credit repayment problems are further examined in the regression model presented in Chapter VI.

CHAPTER V

FACTORS ASSOCIATED WITH FARMERS' OUTSTANDING CREDIT

Indian cooperative officials and other observers argue that credit is not used for productive purposes and that the stated purpose of borrowings may be different than the actual use of credit. During the survey, only a few farmers admitted that they used their institutional credit for consumption purposes. The purpose of this chapter is to examine in a more systematic fashion than tabular analysis the relationships between the farmers' amount of outstanding credit at the time of the interview and their consumption, investment, assets, and income.

The analysis in the proceding chapter indicated that defaulters had fewer assets, both movable and immovable, larger investments and consumption expenditures, and consumed a greater percentage of their agricultural output than did non-defaulters. In addition, these tabulations suggested that the farmers' indebtedness to non-institutional credit sources placed substantial claims upon their annual income.

I. WHY FARMERS BORROW

The factors affecting the farmer's borrowings can be divided into two general categories: 1) the demand for credit, reflecting farm size and practices, as well as family living and social needs; and 2) the availability of credit, and its cost.

Credit Demand

Larger farms need more capital than small farms, but their needs may not increase proportionally, if larger farms 1) do not have proportionally more overhead and living costs or 2) do have proportionally more cash reserves to draw on to substitute for credit. Partly offsetting this situation may be the greater willingness of larger farmers to invest and borrow more since they may be able to absorb greater risks.

The farmers' demand for credit, given a certain farm size, may be affected by differences in farming intensity, family size, and special needs. Farmers with similar crops, soil conditions, and markets may have varied credit needs because of different farming intensities; irrigation, fertilizer, and modern cultivation practices require more capital than traditional practices. If the farmer has sufficient reserves, operating expenses and capital investments will be financed out of savings or, if they are not, they will be financed by borrowing.

Family size is likely to be another important determinant of the farmer's need to borrow and his ability to repay outstanding credit. If dependents are numerous, they may eat up possible savings and force the farmer to borrow for basic subsistence. If, on the other hand, the farmer has a large number of able bodied dependents, he may not need to hire as much labor, and his operating expenses will be lower. What the net effect on credit needs will be is hard to determine a priori.

Farmers may borrow for a variety of special needs. One of the major reasons why farmers have outstanding credit is that they were forced to borrow funds to meet temporary adversity. Low income farmers faced with a bad harvest may find it more convenient to borrow than sell their assets. Other special needs might include weddings, births, and deaths; and in these situations, farmers have a choice of selling assets or borrowing. Their decision will depend upon the credit available and its cost.[1]

Credit Supply

The farmer's ability to borrow depends upon the number of credit sources and their assessment of his collateral in terms of assets, tenure status, and previous repayment history. Village moneylenders, relatives, and friends are often the farmer's only sources of funds to meet temporary adversities and special occasions such as marriages. Cooperatives, commercial banks, and special government lending agencies often make their assessment of the farmer's credit-worthiness on much the same basis as non-institutional lenders. Farmers may find moneylenders a more convenient source of credit to meet unexpected contingencies, since they have a timely knowledge of their clients' financial status, while institutional lenders often insist upon formalities which are complex, time consuming, and perhaps degrading.

The supply curve of capital, as viewed by the farmers, often appears as a "step" function since the various sources of capital

[1]Millard F. Long, "Why Peasant Farmers Borrow," American Journal of Agricultural Economics, L, No. 4 (November, 1968), pp. 1004-1005.

lend for only certain purposes and at different interest rates. Also, new sources of credit become available as the farmer reaches a new plateau of financial security. Short-term loans from cooperatives usually represent the lowest cost loans. Special subsidies sometimes lower the cost of these loans even further. Nominal interest rates are higher for medium and long-term loans obtained from primary agricultural cooperatives and land development banks. Commercial banks usually have higher interest rates than cooperatives, except in cases where they finance agriculture through cooperatives. Money-lenders and commission agents charge the highest nominal interest rates since their risks are greater. Cooperatives often receive subsidies from the government which reduce their risks and, therefore, enable them to lower their rates.

This stepwise pattern of capital supply is illustrated in Figure 4. Amount OA is available at the lowest nominal interest rates. For example, cooperatives may offer OA, fixing the farmer's credit limit on a per crop per acre basis. If the farmer needs more credit, either medium or long-term, he can borrow AB for a specific purpose but at a higher nominal interest rate. Credit from money-lenders can be represented by the segment CD available at the highest interest rates. After borrowing the amount OD, no more capital is available since the farmer has reached his credit limit in his lenders' respective evaluations.

Figure 4 also helps account for examples of the mis-utilization of production credit. Obviously, borrowers want credit at the lowest possible cost, and if supervision is weak, production credit can be diverted to unintended uses.

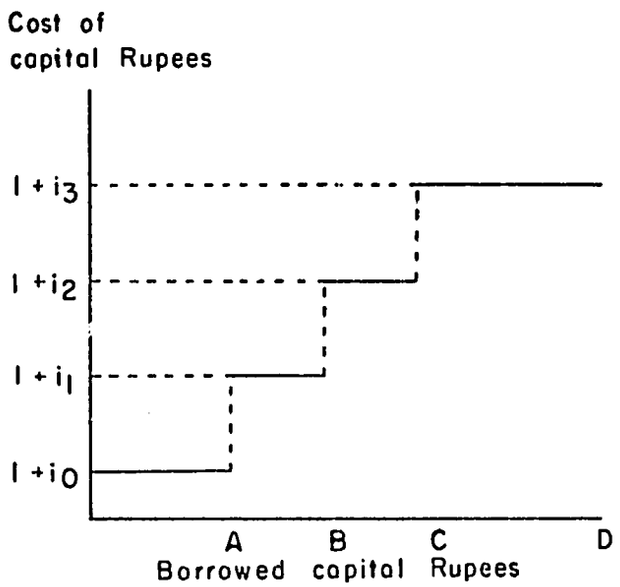

Figure 4. Farmers' Supply Curve of Capital

The nominal interest rate usually reflects the cost of credit from the unorganized money market; however, this is not the case with institutional credit. Loans from cooperatives, commercial banks, and agricultural development banks cost much more than their official interest rates, which are often pegged at an unrealistically low rate. The borrower's total cost of credit from institutional sources includes the application fee, the form filing expenses, the registration fee, traveling expenses, the cost of influence or entertainment of people who assist the cultivator, sacrifices of wages or output as a result of lost working days, and repayment flexibility.[2] Unsecured loans do not require the land registration fee or the title search, but their costs are still significant.

If the size of the loan increases, the registration fee will assume greater importance as the cultivator must mortgage his land. In addition, travel expenses will increase as more paper work and trips to the lending institution are required.

The timing of credit disbursement may also offset credit cost and utilization. With most crops the critical need for credit occurs at sowing time, followed by weeding and harvest. If farmers receive loans long after they were needed, cultivators cannot make effective use of them, their purpose is defeated, and there is a

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[2]The real cost of credit in the three districts of Mysore State was approximately 21 percent of the total value of a Rs. 100 loan. In East Pakistan, Mirza Shahjahan found the real cost of credit to be 24 percent of the total value of a Rs. 100 loan. See Miraz Shahjahan, Agricultural Finance in East Pakistan (Dacca, Pakistan: Asistic Press, December, 1968), p. 72.

temptation to consume the loan. In the next season, they may turn to costlier, but more dependable and flexible credit sources. The growing season does not wait for bureaucrats to shuffle papers.

II. MYSORE EMPIRICAL ANALYSIS

Many of the reasons why farmers borrow were presented in the previous section. Certain limitations exist in using the survey data to examine the interdependence between the farmers' demand for credit and various independent variables. For example, if it were possible to measure precisely the farmer's risk preference, assets, and expected returns, one could reduce his expectations about the uncertain future and, with this, his demand for credit. The data were not available for so sophisticated an analysis as suggested in the previous discussion; rather, in this section, surrogate measures of some of the suggested concepts are used to explain much of the difference in the total amount of credit outstanding among 134 Indian farmers

Least squares multiple regression using a linear model was tried and those results are presented in the following section. To explain the farmers' total amount of credit outstanding, a multiple regression of the linear form was used:

$$y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8 + e$$

Where:

y = total amount of credit outstanding measured in rupees

x_1 = capital investments in rupees

x_2 = farm assets in rupees

x_3 = consumption in rupees

x_4 = annual festival expenditures in rupees

x_5 = gross farm output in rupees

x_6 = operating expenses in rupees

x_7 = interest rate

x_8 = dummy variable
defaulters = 1
non-defaulters = 0

e = error term

Variables: Definition and Use

Credit. The total amount of credit outstanding per farmer from primary land development banks, primary credit cooperatives, commercial banks, moneylenders, relatives, and friends was summed to give the dependent variable. Short-term loans were sanctioned in 1971 while other loans were granted within the last five years. By recording only the principal and interest due on medium and long-term credit, the dependent variable records the farmer's outstanding financial obligations on an annual basis.

Capital investments. In this analysis investments represented the actual amount of money spent on the acquisition of land and its improvements, new wells and irrigation works, purchase of pump sets and installation, power tillers and tractors, and the purchase of livestock. Livestock included the purchase of milch cows, pigs,

sheep, and chickens. Mysore farmers often attend bullock fairs where they trade draft animals. The net gain or loss in this activity was not recorded but, in the case of a purchase of a new pair of bullocks, this expense was included.

Farm assets. This variable included the current market value of the total farm owned assets in land, livestock, and farm equipment. Buildings could have been included as assets, but given the Mysore farmers' customs which exclude the buying and selling of houses at the village level except in cases of extreme indebtedness to money-lenders, the salvage or sale value of buildings is not important in this variable. However, since the Small Farmers Development Agency had assisted farmers in obtaining loans for cattle sheds and milking parlors from cooperatives and commercial banks, these buildings were included in the value of farm assets.

Farm assets is a rough index of permanent income and farmer's credit-worthiness Borrowing capacity is expected to be greater if farm assets grow, and it is possible to hypothesize a positive relationship between assets and borrowings.

Consumption. Consumption expenditures consisted of expenses incurred on marriages, births, deaths, and litigation which were recorded for the last five years and then averaged to give a yearly figure for these activities. Data on these consumption items have some limitations since they were obtained on a recall basis. If Indian farmers incur heavy debt in order to celebrate marriages, births, and deaths as the status in their community requires, it is

possible to hypothesize a positive relationship between consumption, as it is defined here, and amount of total debt. Litigation expenses for legal assistance were included here since it represents the diversion of capital away from productive assets and into consumption.

Annual festival expenditures. As the tabular analysis indicated, the sample farmers spent at least 15 percent of their gross farm output on celebrating various festivals throughout the year and this expense is far more than the "puritanical austerity" that P. G. K. Panikar[3] contends it represents. The inclusion of this item in the analysis was an attempt to test the hypothesis that Indian cultivators borrow to finance festivals and that this was a major cause of indebtedness. Festival expenses were separated from marriages and other expenses to see if farmers went into debt for annual religious observances.

Gross farm output. If current gross farm output is related to assets, the farmer may have adequate resources and less need for borrowing. The net effect of current income and expenses will determine much of the need for credit. Especially since short-term loans from cooperatives were a large component of the sample farmer borrowings, it is possible to hypothesize an inverse relationship between gross farm output and the total amount of outstanding credit.

[3]P. G. K. Panikar, "The Burden of Debt in Indian Agriculture," Journal of Farm Economics, XXXXV, No. 1 (February, 1963), p. 203.

Operating expenses. Operating expenses were defined as the cash costs of production for all crops produced in 1970-71. These expenses included hired labor, seed, water, farm yard manure, chemical fertilizer, and plant protection. Since all farmers obtained short-term loans, a positive relationship between operating expenses and the total amount of credit was expected.

Interest rate. Since farmers borrowed from several sources of credit at different interest rates, a weighted interest rate was used as the independent variable. The nominal interest rate from moneylenders may have been less than the real interest rate, since the farmers may not have understood hidden charges in their loans, and they may have given only the official (legal) rates during the interview.

Dummy variable. The dummy variable was included in the regression analysis to see if there was a significant difference between defaulters and non-defaulters. If farmers who defaulted on their short-term loans were poorer financial managers and had to borrow from several sources to meet their subsistence needs, then it is possible to expect a positive relationship between defaulters and the amount of total debt. Therefore, defaulters were expected to have a larger amount of credit than non-defaulters.

III. RESULTS OF THE REGRESSION ANALYSIS

Zero order correlation matrices for the dependent variable, total amount of credit outstanding, and various independent variables

are presented in Tables 14, 15 and 16 for small and large farmers. Regression coefficients of the independent variables estimated through multiple regression analysis along with their standard errors and coefficient of multiple determination for all farms and for each category are presented in Table 17. One very significant result of this analysis is that the total amount of credit outstanding does increase with capital investments. This result held for farmers in both categories and for all farms. The regression coefficient for capital expenditures for all farmers, which is statistically significant at the 10 percent level of probability, indicates that an additional Rs. 1 of capital investment increases the total amount of credit outstanding by Rs. 0.28.

The coefficient for farm assets is statistically significant at the 10 percent level of probability only for small farmers. This indicates that for small farmers, as their farm assets increased, their outstanding credit also increased.

One of the important objectives of this analysis was to verify the hypothesis that the Indian farmer incurs heavy debt on occasions like marriages, births, deaths and yearly festivals, and thus they became indebted to non-institutional sources of credit. For the total sample of farmers, the regression coefficient associated with consumption was significant at the 5 percent level and it had the expected positive sign, indicating a direct relationship between consumption and the total amount of borrowing. Also, the results show that the hypothesis can be accepted in the case of large farmers. However, for small farmers the "T" test for $H:b_4 = 0$ at the 10 percent level

TABLE 14. Correlation Matrix, Total Amount of Credit Outstanding and Various Independent Variables--70 Small Farms in Three Districts of Mysore State, India, 1970-71

	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8
Y	1.00	0.11	0.36	0.58	0.38	0.19	0.03	0.12	0.23
X_1		1.00	0.78	0.30	0.37	0.20	-0.06	0.23	-0.14
X_2			1.00	0.54	0.43	0.25	-0.10	0.18	0.01
X_3				1.00	0.23	0.0[illegible]	0.02	0.08	0.12
X_4					1.00	0.09	0.09	0.04	0.01
X_5						1.00	0.01	0.29	0.07
X_6							1.00	0.25	-0.04
X_7								1.00	-0.05
X_8									1.00

Y = total amount of credit outstanding

X_1 = gross farm output

X_2 = operating expenses

X_3 = capital investments

X_4 = farm assets

X_5 = annual consumption expenditures

X_6 = interest rate

X_7 = annual festival expenditures

X_8 = dummy variable, defaulter = 1 and non-defaulter = 0

TABLE 15. Correlation Matrix, Total Amount of Credit Outstanding and Various Independent Variables--64 Large Farms in Three Districts of Mysore State, India, 1970-71

	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8
Y	1.00	0.16	0.43	0.53	0.13	0.23	0.18	0.10	0.28
X_1		1.00	0.67	0.17	0.63	0.07	-0.12	0.47	-0.08
X_2			1.00	0.45	0.62	0.09	0.01	0.40	-0.04
X_3				1.00	0.33	0.19	0.01	0.15	-0.02
X_4					1.00	0.27	-0.09	0.47	-0.22
X_5						1.00	0.04	0.11	-0.18
X_6							1.00	0.01	0.31
X_7								1.00	-0.09
X_8									1.00

Y = total amount of credit outstanding

X_1 = gross farm output

X_2 = operating expenses

X_3 = capital investments

X_4 = farm assets

X_5 = annual consumption expenditures

X_6 = interest rate

X_7 = annual festival expenditures

X_8 = dummy variable, defaulter = 1 and non-defaulter = 0

TABLE 16. Correlation Matrix, Total Amount of Credit Outstanding and Various Independent Variables--134 Farms in Three Districts of Mysore State, India, 1970-71

	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8
Y	1.00	0.26	0.47	0.58	0.28	0.29	0.04	0.19	0.22
X_1		1.00	0.76	0.32	0.68	0.24	-0.20	0.52	-0.11
X_2			1.00	0.54	0.69	0.28	-0.14	0.48	-0.06
X_3				1.00	0.41	0.28	-0.07	0.24	-0.01
X_4					1.00	0.37	-0.13	-0.49	-0.16
X_5						1.00	-0.06	0.25	-0.12
X_6							1.00	0.01	0.14
X_7								1.00	-0.10
X_8									1.00

Y = total amount of credit outstanding

X_1 = gross farm output

X_2 = operating expenses

X_3 = capital investments

X_4 = farm assets

X_5 = annual consumption expenditures

X_6 = interest rate

X_7 = annual festival expenditures

X_8 = dummy variable, defaulter = 1 and non-defaulter = 0

TABLE 17. Factors Associated with the Total Amount of Outstanding Agricultural Credit--by Farm Size--134 Farms in Three Districts--Mysore State, India, 1970-71

	Farm Size		All Farms
	Small	Large	
Constant term	696.87	-4,124.30	-3,192.17
Capital investments	0.4209** (0.0983)[a]	0.2664** (0.0763)	0.2846** (0.0562)
Farm assets	0.0453** (0.0156)	-0.0282 (0.0171)	-0.0118** (0.0115)
Consumption	0.07902 (0.07880)	0.9770** (0.4314)	0.7704** (0.3200)
Annual festival expenditures	0.8047 (0.8119)	-0.0105 (0.7879)	-0.0841 (0.5518)
Gross farm output	-0.5952** (0.3247)	-0.0049 (0.1806)	-0.0908 (0.1367)
Operating expenses	0.7190 (0.9086)	1.0674** (0.4076)	0.9457** (0.3109)
Interest rate	-7,524.1442 (17,937.5009)	20,793.1109 (35,039.9356)	20,501.9530 (17,989.1778)
Dummy variable defaulter = 1 non-defaulter = 0	1,126.9079 (875.9342)	4,144.6176** (1,574.7876)	3,072.7743** (867.4377)
Coef. of mult. det. (R^2)	.48	.50	.47
F value	7.00	6.74	13.92
Mean of dependent variable	2,602.43	5,636.37	4,051.76
No. of obs.	70	64	134

[a]Standard error of the b_i.

**The regression coefficients were statistically significant at the 10 percent level of probability.

indicates that the regression coefficient is not statistically different from zero. The hypothesis cannot be accepted at this level of significance for small farmers.

The results show also that there is no positive association between annual festival expenditures and the farmers' total amount of credit for all sizes of farms. The regression coefficients were not statistically different from zero at any acceptable level of significance. In the context of this study, the hypothesis that there is a significant positive association between annual festival expenditures and total debt cannot be accepted.

These results indicate that the sample farmers did not finance their annual festival expenditures by borrowings. Festivals were financed out of their yearly incomes. However, for the most important occasions in their lives, cultivators borrowed heavily to finance these celebrations. These expenditures represent the diversion of capital away from productive investments and into consumption. During the survey, which was conducted during the marriage season, farmers often mentioned their obligations to provide large dowries for their daughters so that suitable marriages could be arranged for them. Before a value judgment can be made about these expenditures, the traditions of the society and the felt obligations of the family to their community must be considered.

The regression analysis indicates an inverse relationship between gross farm output and credit for small farmers. This suggests that small farmers have less outstanding credit as their income rises. The regression coefficient was not statistically significant from zero

in the case of large farmers and when all farmers were grouped together. On the basis of these results, no general inferences can be drawn with regard to the relationship of gross farm output to credit.

Operating expenses were associated with the total amount of credit for large farmers, but not for small farmers, according to the regression analysis. The coefficient for operating expenses in the small farmer category was not statistically significant from zero at the 10 percent level of probability. For all of the farms, the regression coefficient associated with operating expenses was Rs. 0.94, indicating that outstanding credit increases by Rs. 0.94 for every Rs. 1.00 increase in operating expenses. In general, large farms were meeting operating expenses by borrowing. These results were supported by two characteristics of the present credit cooperative structure. In recent years, large farmers have dominated the credit cooperatives and have been able to obtain loans, while small farmers have not been able to obtain credit for crop production purposes. This was one of the main reasons for the creation of the Small Farmers Development Agency. In addition, the district cooperative central banks have greatly expanded the quantum of credit available to cooperative societies in the last three years and large farmers have benefited accordingly. Also, the scales of finance for the major corps were revised for the 1972-73 season, while previous scales of finance may have given more credit than was required for operating expenses.

The weighted interest rate was not statistically significant from zero at any acceptable level of probability. No sound conclusions

can be drawn about the association between the total amount of outstanding credit and the interest rate.

The dummy variable indicated that there was a significant difference between the total amount of credit held by large farmers who were defaulters and non-defaulters. This indicates that farmers who were defaulters had more financial obligations to various credit sources than did non-defaulters.

The variable, family size, was included in the first run of the regression analysis to measure its influence on the amount of outstanding credit. The regression coefficient was not statistically significant from zero, and this variable did not add any significant amount to the coefficient of multiple determination and, therefore, it was dropped from the analysis.

The analysis in this section clearly indicates that additional borrowings among the farms studied were used by-and-large for productive purposes. Capital investments were more important than operating expenses in explaining the total amount of credit outstanding. However, in the case of small farmers no general inferences can be drawn with regard to the relative importance of capital investments and operating expenses in explaining their total amount of credit outstanding since neither regression coefficient was significantly different from zero at the 10 percent level of probability.

Also, the results support the hypothesis that large farmers incur heavy expenditures in celebrating marriages and other social activities. Although in the case of small farmers this hypothesis

cannot be accepted at the 10 percent level of probability, the sign of the consumption coefficient was as expected.

The hypothesis that festivals contribute to indebtedness and the underutilization of credit cannot be accepted. Farmers could have based their annual festival expenses on their actual income in their possession at the time of the celebrations. If this is the situation, then farmers did not borrow to finance their festivals nor was this a contributing factor in their indebtedness position.

In general, the results suggest that as consumption and festivals do not contribute to small farmers' outstanding credit, but as operating expenses and capital investments increased so did the outstanding credit. This indicates that some other factors such as productivity differences, managerial differences, and family living needs could account for part of the outstanding credit. Few satisfactory substitutes were available to test these items in the analysis.

CHAPTER VI

FACTORS AFFECTING SHORT-TERM CREDIT REPAYMENT

The primary agricultural credit cooperatives and the district cooperative central banks have a very limited basis for determining the borrowers' credit-worthiness. The information which the financing agency, the district cooperative central bank, utilizes to determine cultivators' eligibility for crop production credit is restricted to the normal credit statement. If the farmers are eligible for a loan, they receive credit according to the number of acres and kind of crop concerned. No other variables except the facts that they are members of the cooperative and that they repaid their previous short-term loan are considered. Borrowers must accept a fixed amount of the crop production loan in cash and fertilizer. This method of evaluation ignores many economic and non-economic factors which affect the borrowers' ability to repay their crop production loans and thus contributes to the problem of overdue crop production credit. This chapter examines the relationship between some of these additional factors--farm resources, consumption expenses, age, family size--and the ability to repay crop production loans in the Mysore farm situations surveyed.

In contrast with the previous chapter which concentrated on the factors associated with the total amount of outstanding credit, this chapter focuses on one part of the outstanding credit, short-term credit, and the problems associated with its repayment. Factors

affecting farmers' repayment of production credit are divided into three broad categories: 1) economic factors such as assets, indebtedness, special expenses, and input/output ratios; 2) family characteristics such as family size, and the farmer's age and education; and 3) special circumstances and temporary adversities. Economic factors and family characteristics are examined in the regression analysis in the first section while special circumstances and temporary adversities are entered in the analysis in the second section.

The tabular analysis presented earlier implied that defaulters, on the average had fewer assets, larger investments, and consumed a greater percentage of their agricultural output than did non-defaulters. In addition, defaulters had larger debts outstanding than did non-defaulters.

The tabular comparisons suggested also that such non-economic characteristics as age and family size may help account for farmers' inability to repay their crop production credit. While tabular analysis provides general clues about these relationships, it does not tell much about the degree to which any one of these variables affects defaulting. Nor does tabular analysis indicate what is the relationship between defaulting and a particular factor if others are held constant. To refine the analysis of factors related to defaulting, least squares multiple regression using a linear model was tried. The results are presented in the first section of this chapter.

Also, it can be hypothesized that natural calamities and seasonal price fluctuations are major reasons for some cultivators defaulting

on crop production loans, and that repayment schedules are overly tied to the annual cropping cycle, which forces farmers to repay directly after harvest when supplies are plentiful and the price is low. In the second section of this chapter, these additional elements are again examined along with the socio-economic factors, using a multiple regression approach.

Small and large farmers are to be analyzed separately to facilitate policy recommendations. Since special agencies such as the SFDA and the MFAL have been created specifically to deal with the problems of small farmers, the characteristics of this group's need to be examined separately. Also large farmers may have special repayment problems which need to be studied separately.

I. RELATIONSHIPS BETWEEN SOCIO-ECONOMIC FACTORS AND LOAN OVERDUES

First, the variables will be defined in more detail and the rationale for their use explained. Then the regression results will be presented along with several suggested policy implications.

To analyze the relationship between loan repayments and selected socio-economic variables, a multiple regression function of the following form was used.

$$y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8 + b_9x_9 + e$$

Where: y = amount of the 1970-71 crop production loan overdue measured in rupees

x_1 = capital investments in rupees

x_2 = farm assets in rupees

x_3 = annual expenditures on marriage, birth, death, and litigation in rupees

x_4 = net output per acre for all crops in rupees

x_5 = percentage of operating expenses covered by short-term loans

x_6 = interest rate on short-term loans

x_7 = farmer's age in years

x_8 = family size including permanent servants

x_9 = debt-to-asset ratio

e = error term

Crop Production Loan Overdue

The total amount of crop production credit overdue from farmers for the 1970-71 year was the dependent variable. In the case of non-defaulters, the value of the dependent variable was zero since they had repai all of their short-term credit. Defaulters, by definition, had failed to repay all or part of their crop production credit to their cooperative society. Other researchers[1] in the field of production credit have used the percentage of crop production credit outstanding as the dependent variable. This was tried in an exploratory regression

[1]Ronald L. Tinnermeier, "Supervised Credit and the Small Farmer" (paper presented at the Seminar on Small Farmer Development Strategies, Columbus, Ohio, September, 1971), pp. 55-58. Tinnermeier used the percentage of crop production credit outstanding as the dependent variable in his analysis of Peruvian crop production loans.

analysis of the Mysore survey data. However, the absolute amount of the short-term loan overdue resulted in a closer fit (higher R^2 value).

Capital Investments

In this analysis capital investments represent a claim on the cultivators' annual incomes since they were required to finance their acquisition of land and its improvements, new wells and irrigation works, purchase of pump sets and installation, power tillers and tractors, and the purchase of livestock. If credit agencies do not have a good decision-making framework to judge a borrower's credit-worthiness, they may over-finance farmers and hence contribute to their inability to repay their crop production loans and their installments on medium and long-term credit. Whether this offsets the contributions of capital investments to the productivity of short-term credit is hard to determine prior to empirical analysis.

Farm Assets

This variable was the current (1972) market value of the total farm owned assets in land, livestock, and farm equipment as estimated by the farmers interviewed. Since credit was allocated according to the type of crop and the amount of acreage in each crop, farmers with larger assets in cultivated land received more credit than farmers with less acreage.

Annual Consumption Expenditures

Consumption expenditures included only expenses for marriages, births, deaths, and litigation during the previous five years, averaged

to give yearly figures for these activities. Since these expenses were usually financed by borrowing, they represent extraordinary claims upon farmers' incomes. This may reduce the amount of funds available to repay the cooperatives and lead to defaulting on the crop production loans. If, as observers speculate, borrowers divert short-term credit to these consumption purposes, then we can expect an inverse relationship between consumption and overdue loans. During the survey, only three borrowers admitted that they had diverted their crop production loans to these purposes. Since officials from the district cooperative central banks or the Cooperation Department were present during the interviews, borrowers may have been reluctant to discuss diversion of funds to other purposes. Recurring items, such as food, clothing, and school expenses, were not included in consumption since the data were not recorded in the survey.

Net Output Per Acre

This variable measured the average returns per acre for all crops during 1971. The major crops grown included paddy, ragi, jowar, maize, sugar cane, groundnuts, and vegetables. Small farmers usually had only two or three crops while large farmers tended to have a greater variety of crops under cultivation. This variable can be considered an unrefined proxy for the effectiveness with which a farmer manages his operations, combined with the innate productivity of his holdings.

Ratio of Credit to Operating Expenses

The percentage of operating expenses covered by short-term loans

was included as an independent variable since the tabular comparisons indicated that defaulters, both small and large, had a higher percentage of their operating expenses financed by short-term loans. Non-defaulters had more resources and may not have needed to borrow as much credit for crop production purposes as defaulters. Defaulters may be under or over-financed by the crop loan system. If this is indeed the case, the cooperatives' scales of finance need to be revised.

Age

The comparison of averages indicated that defaulters, both small and large farmers, were older than non-defaulters. Older farmers may not have been able to use inputs as productively as younger farmers due to physical limitations or greater reluctance to depart from traditional, low-yielding practices.

Family Size

The average defaulter had a smaller family than the average non-defaulter. This can be interpreted in two ways. Non-defaulters, by having larger families and thus a larger labor supply than did defaulters, may have had less need to hire labor at critical seasons. On the other hand, non-defaulters had more assets and may have been better able to support larger families and servants.

Interest Rate

Even though there was only a small variation in the interest rate charged by the cooperative societies, this variable was included to ascertain whether this did have any significant effect on the

amount of the loans outstanding. One would expect higher interest rates to result in some increase in default. This is of special current relevance because, in recent years, cooperatives have increased the interest rates on short-term loans and in 1972 Indian politicians were pressuring the cooperative banks to reduce the interest rate.

Debt-to-Asset Ratio

The farmers' total current debt outstanding from primary land development banks, primary credit cooperatives, commercial banks, moneylenders, relatives, and friends was divided by their current assets to give the debt-to-asset ratio. This ratio was included to determine if farmers who were heavily indebted had problems repaying their crop production loans.

II. RESULTS OF THE REGRESSION ANALYSIS

Regression coefficients of the independent variables estimated by multiple regression analysis along with their standard errors and coefficient of multiple determination, are presented in Table 18 for all 132 farms and the two size categories. The correlation matrices for all farms and the two size categories are presented in Tables A-5, A-6, and A-7 in Appendix A. Of the 136 records on the data set, four had missing values for one or more of the independent variables and hence were included in the analysis for predicted values only.

One significant result of this analysis was that the amount of overdue crop production loans increased with capital investments. This relationship held for farmers in all three groups. An important

TABLE 18. Factors Associated with Overdue Short-Term Loans--132 Farms in Three Districts of Mysore State, India, 1970-71

Source	Farm Size		All Farms
	Small	Large	
Constant term	320.51	-2,646.70	-1,747.80
Capital investments	0.0280** (0.0161)[a]	0.1273** (0.0333)	0.1269** (0.0211)
Farm assets	0.0001 (0.0029)	0.0199** (0.0064)	0.0146** (0.0038)
Annual consumption expenditures	0.0854 (0.1447)	-0.4619** (0.2145)	-0.2899** (0.1373)
Net output per acre	0.1174 (0.1689)	-0.2862 (0.6571)	-0.1859 (0.3476)
Percentage of operating expenses covered by short-term loans	177.0257** (19.5143)	560.7724 (421.7238)	199.4574** (59.5128)
Age	-2.4169 (6.3081)	38.7028 (32.0830)	21.3729 (14.2294)
Family size	19.8652 (27.8754)	-70.0704 (57.5792)	-43.1342 (35.7850)
Interest rate	-2,767.2317 (11,338.7399)	11,063.6110 (25,937.3120)	10,916.5853 (16,484.3896)

TABLE 18 (continued)

Source	Farm Size		All Farms
	Small	Large	
Debt-to-assets ratio	4.9260 (39.8724)	1,204.5391 (877.0637)	93.9747 (120.2682)
Coef. of mult. det. (R^2)	.59	.45	.41
F value	9.56	4.86	9.44
Mean of the dependent variable	506.94	1,526.86	993.58
Number of observations	69	63	132[b]

[a]Standard error of the b_i.

[b]Of the 136 observations in the data set, four had missing values for one or more of the independent variables and hence were included for predicted values only.

**The regression coefficients were statistically significant at the 10 percent level of probability.

objective of this analysis was to examine the hypothesis that lending agencies do not have adequate criteria and information to determine borrowers' credit-worthiness for short and medium-term credit--especially the latter, which is used for capital investments. The cooperative societies have a formula for determining a borrower's repayment capacity for both short and medium-term credit. The formula[2] is as follows:

1. For short-term loans, one-third of the average value of the cultivator's gross product will be used for the cash component; the remaining produce will provide repayment for the kind portion of the loan.
2. For medium-term loans, one-sixth of the balance of remaining output per acre will be considered a safe measure of the cultivator's repaying capacity for these loans. The cultivator's eligibility for medium-term loans will be three to five times the annual repayment capacity if the loan is for three or five years.

An evaluation of the cooperatives' repayment schedule can be made using the values of the independent variables obtained in the earlier tabular analysis of the survey data in the above formula in conjunction with the SFDA's enterprise budgets for medium-term credit. The SFDA encourages small farmers to obtain medium-term loans for milch cows, pigs, chickens, and sheep. Since the SFDA had already encouraged farmers to start small dairies, the agency's budget for

[2]R. Thirunarayanan, "Coordination Between Short, Medium and Long Term Credit," Indian Cooperative Review, VII, No. 3 (April, 1970), pp. 418-420.

milch cows is used in the following example. The SFDA's enterprise budget for the dairy project is presented in Table 19.

The results of applying the average values for small farmers in the survey to the formula for determining farmers' repayment capacity indicated that the cooperatives and the SFDA had over-estimated the small farmers' repayment abilities. For example, the small farmers in the survey had an average annual gross farm output of Rs. 1,905.16 and a net output of only Rs. 978.32. The formula was applied to both gross and net returns to determine if the omission of operating expenses made any difference in the small farmers' eligibility for medium-term credit. Since the cash and kind components of the short-term loans were not recorded for all farmers, the analysis in Table 20 calculated the repayment of almost all of the short-term loan by the cash component and the remainder was covered by the kind component. This approach did not invalidate the results, since the entire loan had to be repaid regardless of whether it came from one component or the other.

The annual repayment capacity for medium-term loans was Rs. 200.07 based on gross returns and Rs. 46.22 for net returns. If the total amount of medium-term credit that farmers were eligible to receive was calculated for five years based on gross and net returns, they could obtain Rs. 100.35 and Rs. 231.10, respectively. The amounts are far short of the credit approved by the cooperatives for dairy projects. For example, one cross-bred dairy cow costs, on the average, Rs. 2,000 and the SFDA gives small farmers a 25 percent subsidy, which reduces the initial cost of one cow to Rs. 1,500.

TABLE 19. Livestock Budget for One Crossbred Cow[a]

Item	Price (Rupees)
Purchase of one crossbred cow	2,000
Variable costs	
a. Cost of feeding one cow at Rs. 4.00 per day for one year	1,460
b. Cost of feeding one calf per year	250
c. Medicines and miscellaneous costs	180
Total variable costs	1,890
Receipts	
a. Sale of milk, average 8 litres per day Rs. 1.25 per litre for 300 days	3,000
b. Sale of one male calf	50
c. Sale of manure	100
Total receipts	3,150
Net returns above variable costs	1,260

[a]T. Krishnan, Joint Director (Dairy), "Economics of Maintaining One Cross-Bred Cow" (Bangalore: Department of Animal Husbandry and Veterinary Services, n.d.). (Mimeographed.)

TABLE 20. Use of the Cooperatives' Formula to Compute Average Repayment Capacity for Short and Medium-Term Credit Based on Gross and Net Returns--71 Small Farms--Mysore State, India, 1970-71

Item	Gross Returns	Net Returns
	---------- Rupees ----------	
Average annual farm output	1,905.16	978.32
Repayment capacity for short-term loans (according to the formula)	x .33	x .33
a. Cash component	628.70	322.85
b. Kind component	1,276.46	655.47
Average short-term loan	699.91 -628.70	699.91 -322.85
Remainder of short-term loan covered by kind component	71.21	377.06
	1,276.46 -71.21	655.47 -377.06
Annual farm income available for other loans	1,205.25	278.41
	x .166	x .166
Annual repayment capacity for medium-term loans (according to the formula)	200.07	46.22
	x 3	x 3
Amount of medium-term credit based on:		
three-year repayment	600.21	138.66
five-year repayment	1,000.35	231.10

Since the Department of Animal Husbandry and Veterinary Services recommends that farmers purchase at least two milch cows as the minimum dairy unit, small farmers were eligible for loans of Rs. 3,000.

In contrast to the survey results, the Mysore District Co-operative Central Bank calculated the farmer's annual repayment capacity for medium-term loans at Rs. 79 per acre for dry crops and Rs. 214 per acre for irrigated crops. The Bank then set the minimum size of land holdings for which medium-term credit would be granted for the purchase of milch cattle at either 5.5 acres of dry land or 2 acres of wet land taking into account the incremental income from the dairy. Under this program, the farmer could repay the principal and interest on a Rs. 1,500 loan for a milch cow in approximately five years. However, the Bank's plan did not account for the simultaneous repayment of short-term credit.[3]

The average repayment capacity of small farmers surveyed was calculated on the existing level of production. If this level of income continued after the new loan, the farmers would be definitely over-financed. However, if the anticipated increase in production had been reflected in the calculations, it would be shown that the farmers could easily repay their medium-term loans.

For example, the livestock budget for a milch cow indicated that a farmer could expect, on the average, an annual net return above operating expenses of Rs. 1,260. With this additional income, the farmer could repay his loan for the purchase of the cow if no

[3] Ibid., p. 419.

problems developed. However, as other researchers[4] have indicated, if the anticipated increase in income due to new investment is over-estimated, this error will lead to non-repayment of short-term loans and medium-term installments. In general, the cooperative societies surveyed did not appraise each application on an individual basis to determine the applicant's repaying capacity for medium-term loans; rather they relied entirely on their repayment formulas, and as a result, farmers were over-financed. Hence, they were burdened with too many repayment responsibilities and, therefore, they defaulted on some of their outstanding credit, usually crop production loans since the consequences of defaulting on short-term credit represented less risk to the farmer than if he defaulted on other financial obligations.[5]

The applicant's other financial obligations were not considered either. On the average, small farmers had a total outstanding debt of Rs. 2,563.78 and an obligation to repay about Rs. 256.37 in interest yearly. In addition, farmers were expected to repay part of the principal on the outstanding debt, which included overdue crop production credit, medium and long-term loans, and debts to moneylenders. With these heavy financial burdens, they were unable to meet all of their obligations. This is reflected in part by the fact that the average farmer surveyed was Rs. 994 in arrears to the cooperative society for short-term loans.

[4]The Mysore District Cooperative Central Bank Ltd., "Proceedings of the Meeting of the Technical Committee Held on 19.1.1972 at 11:00 a.m. in the Premises of the Bank." (Mimeographed.)

[5]Also, farmers were found to use cooperative credit as a risk

A surprising result of the regression analysis was that farm assets were positively associated with overdue crop production loans. Since crop production loans were allocated on a fixed crop and per acre basis, the more assets a farmer had in cultivated land the more credit he was eligible to receive. The regression coefficient for farm assets in the small farmer category was not statistically different from zero. For large farmers and all farmers combined, the regression coefficient for farm assets was statistically significant at the 10 percent level of probability. If all farmers were on the same production function and if they had similar risk preferences, tastes, and production inputs, then those who owned more would borrow less and have less to repay. The data presented in Table 10, page 93, show that non-defaulters in both categories, on the average, had more assets and less short-term credit than defaulters. Thus, the expected relationship between outstanding credit and, in turn, farm assets is inverse; yet the results suggest a strong positive association. The reason for the positive association, which is supported by other researchers' results, is that in this model farm assets measure size, and the amount of outstanding credit increases with the size of the farm.[6]

factor in the adoption of new varieties in Ahmedabad District, Gujarat State. Michael G. G. Schulter, "The Role of Co-operative Credit in Small Farmer Adoption of the New Cereal Varieties in India" (draft of doctoral research, Cornell University, December 4, 1972), p. 23.

[6]Millard F. Long, "Why Peasant Farmers Borrow," American Journal of Agricultural Economics, L, No. 4 (November, 1968), pp. 1004-1005.

The annual consumption expenditures on marriages, births, deaths, and litigation were inversely associated with the amount of overdue crop production credit for large farmers and all farmers, while the coefficient was not statistically different from zero in the case of small farmers. There are two possible explanations for the inverse relationship between these extraordinary consumption expenditures and overdue loans. First, some funds which might have been allocated for consumption could have been diverted to repaying short-term loans. During the survey, a few farmers admitted that they diverted short-term loans to consumption purposes. It is entirely possible that credit could have been diverted in the opposite direction. Second, since farmers borrowed most of their special consumption expenditures from moneylenders, borrowers can divert part of a previous consumption loan to repay crop production credit, or they can obtain credit from moneylenders specifically to repay the cooperatives. Double-entry fictions arise when farmers borrow from moneylenders to repay the principal and interest due on a cooperative loan. Cooperatives then extend a new loan, based on the cultivator's "sound" credit rating, which goes to repay the debt to the moneylenders.[7]

[7]Shirley Childers recorded an intricate web of obligations between cultivators, moneylenders and Cooperative Land Development Banks in Ahmednagar (Nagar) District, Maharashtra State. Loans were given for terracing, bunding, and land improvements; and when installments came due, cultivators, who did not have funds to meet their obligations, turned to moneylenders for the necessary funds. Thus, the cultivator remained in good standing with the cooperative and the moneylender was assured of a dependable supply of capital from the organized money market. See Shirley Childers, "Deccan Moneylending Systems: Double-Entry Fictions" (paper presented at the Conference on Problems of Economic Change XII, Atlanta, Georgia, November 15, 1970). pp. 7-9.

Finally, it is entirely possible that farmers with high consumption activities tended to depend heavily on moneylenders for this and all other purposes and tended to regard the cooperatives as residual claimants upon their repayment responsibilities. This may be further evidence that farmers consider the cooperatives as risk bearers, although it is difficult to substantiate without more survey data.

The regression coefficient associated with net output per acre was not statistically different from zero for any group. However, in the case of large farmers, the coefficient had the expected negative sign. If all farmers were on different production functions but other socio-economic variables were held constant, then those who had a higher output per acre would be in a better position to repay their crop production loans. Thus, the expected relationship between outstanding loans and net output per acre is inverse.

The average annual percentage of operating expenses covered by short-term loans was 152 percent for small farmers, 82 percent for large farmers, and 118 percent for all farmers. The regression coefficient associated with operating expenses was not statistically significant for large farmers, although it had the expected positive sign. The tabulation analysis suggested that small farmers were over-financed in terms of their repayment abilities, as far as crop production loans were concerned. This condition led borrowers to default on short-term credit since they apparently received more credit for crop production than they could productively utilize under their existing cropping patterns and practices.

If operating expenses were associated with overdue loans as the results suggest, then the scales of finance, which determine the quantum of credit in the farmers' crop production loans, did not realistically meet the existing crop production needs of small farmers. The cooperatives may have loaned too much, given small farmers' existing practices; farmers may have to change their production practices to effectively use the credit they received.

The Bangalore District Cooperative Central Bank's scale of finance is presented in Table 21 and examples of commercial banks' scales of finance are found in Tables 22 and 23. The commercial banks and the district bank had a conference in 1972 which resulted in a revised scale of finance for the entire district, even though a meeting of extension personnel, representatives of the bank, and prominent farmers determined the cooperative bank's scale of finance, it did not contain the same recommendations as the Mysore University of Agricultural Science's Farm Planning Manual. For example, the bank's scale of finance recommended Rs. 60.00 for cash expenses and Rs. 100.00 worth of fertilizer per acre for ragi under dryland conditions. On the other hand, the Farm Planning Manual recommended Rs. 166.00 to cover cash expenses and Rs. 55.20 for chemical fertilizer per acre for ragi under dryland farming conditions using traditional cultivation methods and bullock equipment.[8] In general, the actual cash expenses at the farm level would be less than the planning manual

[8]C. Naja Reddy, K. C. Hiremath, and Estel H. Hudson, Farm Planning Manual (Bangalore: Mysore University of Agricultural Sciences, 1970), p. 27.

TABLE 21. Scale of Finance for Major Crops Financed by Cooperatives in Bangalore District

Crops	Present Loan Scale			Revised Loan Scale			
	Cash	Fertilizer	Total	Cash	Fertilizer	Pesticide	Total
	Rupees per acre						
Ragi irrigated	80	90	170	80	170	30	280
Ragi dry	60	110	170	60	100	20	180
Paddy local variety	80	150	230	95	125	30	250
Paddy high yielding	170	330	500	170	280	50	500
Groundnut irrigated	150	200	350	200	100	20	320
Groundnut dry	150	150	300	200	80	20	300
Hybrid maize dry	100	300	400	100	175	25	300
Hybrid maize irrigated	100	300	400	100	275	25	400
Hybrid jowar dry	-	-	-	100	175	25	300
Hybrid jowar irrigated	200	400	600	100	275	25	400
Potato irrigated	800	300	1,110	800	300	50	1,150
Sugar cane	450	550	1,000	500	550	50	1,100
Mulberry	100	200	300	100	200	100	300

Source: D. S. Gururaja Rao, "Scale of Finance (as revised) to be Enforced with Effect from May 1972" (Bangalore: Manager, Bangalore District Cooperative Central Bank, 1972).

TABLE 22. Scale of Finance for Major Crops Financed by Union Bank of India Through Cooperatives in Mysore State, 1972-73

Crop	Present Loan Scale		
	Cash	Fertilizer	Total
	----------Rupees per acre ----------		
Ragi irrigated	100	150	250
Ragi dry	80	80	160
Paddy local variety	150	150	300
Paddy high yielding	150	300	450
Groundnut irrigated	150	150	300
Groundnut dry	100	100	200
Hybrid maize[a]	200	250	450
Jowar dry	75	75	150
Jowar irrigated	100	200	300
Potato--autumn	300	600	900
spring	400	600	1,000
Sugar cane	400	600	1,000
Mulberry irrigated	100	200	300
Mulberry dry	100	100	200
Sea Island cotton	150	150	300

[a]The Union Bank did not indicate if maize was under irrigated or dry cultivation.

Source: J. Jaya Singh, "Scale of Finance for Major Crops in Mysore State" (Mysore City: Manager, Mysore Branch, Union Bank of India, 1972).

TABLE 23. Scale of Finance for Major Crops Financed by Syndicate Bank Through Cooperatives in Mysore State, 1970-71

Crop	Present Loan Scale		
	Cash	Fertilizer	Total
	---------- Rupees per acre ----------		
Ragi irrigated	100	150	250
Ragi dry	80	80	160
Paddy local variety	150	150	300
Paddy high yielding	150	300	450
Groundnut irrigated	230	70	300
Groundnut dry	180	70	250
Hybrid maize	200	250	450
Jowar dry	75	75	150
Jowar irrigated	100	200	300
Potato irrigated (Simla)	900	500	1,400
Potato dry (local)	400	400	800
Sugar cane planting	550	450	1,000
Sugar cane ratoon (sprout)	250	450	700
Mulberry irrigated	100	200	300
Mulberry dry	100	100	200
Hybrid cotton	350	250	600

Source: Syndicate Bank, "Scale of Financing Adopted for Different Crops in the Five Districts of Mysore State Where the Scheme of Financing Cooperative Societies Is Operating" (Manipal: Syndicate Bank, 1972).

recommends due to the use of family labor. Nevertheless, the scales of finance need to be revised and checked by farm extension personnel for a representative sample of all farmers financed by cooperative societies. These records, if maintained over a period of time, would provide a check on the changing credit needs of farmers and the utilization of agricultural inputs.[9]

Other variables included in the model were not statistically significant from zero. The tabular analysis of Chapter IV indicated that there were differences in age and family size between defaulters and non-defaulters; however, these variables were not statistically significant in the regression analysis. The interest rate variable had the expected positive sign for large and all farmers. This indicates that as the interest rate increased, so did the amount of overdue crop production loans. The debt-to-asset ratio had the expected positive relationship with overdues.

[9]A case study of potato growers in the Kketl region of Maharashtra State showed that the scales of finance adopted by cooperatives had no relation to production costs and that they were not uniform among societies. The supply of credit was inadequate in relationship to the cost of cultivating high yielding varieties of potatoes. Also, cooperative societies had very different scales of finance in the same region. Farmers borrowed from moneylenders and traders at exorbitant rates of interest to make up the shortfall in production credit. This study gave further evidence that the scales of finance used by cooperative societies need to be revised so that they can meet the objectives of the cooperative movement. For example, see B. J. Hinge, S. D. Patil, and M. P. Dhongade, "Need for Sound Basis for Credit with Special Reference to Crop Loans," Indian Journal of Agricultural Economics, XXVI, No. 4 (October-December, 1971), pp. 573-574.

III. FARMERS' REASONS FOR DEFAULT

Defaulting farmers, both small and large, were asked in question 18 of the farm survey questionnaire to rank the reasons for defaulting on their crop production loans in order of importance and to give any other major reasons why they were unable to meet their financial obligations in 1970-71. The specified reasons, which reflected a review of related literature prior to the survey in Mysore, were natural calamities, fall in agricultural prices, limited farm resources, rigid terms of repayment, and "other." The reasons which the farmers added included death in the family, injury and sickness of the farmer, misutilization of credit, and a large variety of other problems. However, these "other" reasons were not mentioned frequently enough to be included as a separate category.

To explain the factors associated with the amount of the defaulters' overdue crop production loans, a multiple regression function of the following form was used.

$$y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8 + b_9x_9 + b_{10}x_{10} + b_{11}x_{11} + b_{12}x_{12} + b_{13}x_{13} + e$$

Where: y = amount of the 1970-71 crop production loan overdue measured in rupees

x_1 = capital investments in rupees

x_2 = farm assets in rupees

x_3 = annual expenditures on marriage, birth, death, and litigation in rupees

x_4 = net output per acre for all crops in rupees

x_5 = percentage of operating expenses covered by short-term loans

x_6 = interest rate on short-term loans

x_7 = farmer's age in years

x_8 = family size including permanent servants

x_9 = debt-to-asset ratio

x_{10} = dummy variable, natural calamities (0,1)

x_{11} = dummy variable, limited resources (0,1)

x_{12} = dummy variable, rigid terms of repayment (0,0)

x_{13} = dummy variable, other reasons (0,1)

e = error term

Results of the Regression Analysis

The regression coefficients of the independent variables, along with their standard errors and coefficient of multiple determination for small and large farmers are presented in Table 24. Of the 105 records for this data subset, five observations in the small farmer category and six large farmers had missing values for one or more independent variables, and hence, they were included in the analysis for predicted values only. The non-defaulters were not included in this analysis since they did not report any problems in repaying their crop production loans.

The dummy variables for natural calamities, fall in agricultural prices, limited resources, and other reasons were forced into the regression after the inclusion of all of the other variables. Rigid terms of repayment were dropped to prevent singularity. Large farmers

TABLE 24. Factors Associated with Overdue Crop Production Loans--94 Defaulters--Three Districts--Mysore State, India, 1970-71

Source	Farm Size	
	Small	Large
Constant term	496.42	-6,871.86
Capital investments	0.0318 (0.0206)[a]	0.1096** (0.0424)
Farm assets	0.0002 (0.0031)	0.0467** (0.0096)
Annual consumption expenditures	0.0269 (0.2798)	-0.3619 (0.3617)
Net output per acre	0.2798 (0.2030)	-1.0835 (0.7481)
Percentage of operating expenses covered by short-term loans	113.0648** (54.0425)	41.0163 (460.4689)
Age	-2.9881 (8.9560)	51.1538 (39.8264)
Family size	37.0298 (33.9513)	-97.4858 (88.2379)
Interest rate	2,143.0635 (14,224.1878)	7,941.8201 (26,231.2237)
Debt-to-asset ratio	-0.2597 (45.8711)	1,258.9033 (859.6536)
Dummy variable		
Natural calamities (0,1)	644.9223 (441.7582)	3,894.3499** (1,833.3052)
Limited resources (0,1)	304.9211 (540.5461)	0[b]
Other reasons (0,1)	246.6644 (421.1937)	4,506.1750** (1,114.8023)

TABLE 24 (continued)

Source	Farm Size	
	Small	Large
Rigid terms of repayment	0[c]	0[c]
Coef. of multi det. (R^2)	.24	.69
F value	1.02	6.38
No. of observations	51	43

[a]Standard error of the b_i.

[b]There were no values for this variable.

[c]This variable was excluded to prevent singularity.

**The regression coefficients were statistically significant at the 10 percent level of probability.

did not mention limited resources as a major reason for overdue loans and neither large nor small farmers reported a fall in agricultural prices as a major problem. Since non-significant results in terms of the beta coefficients were obtained for small farmers, only the results for the large farmers are discussed.

One of the important objectives of this analysis was to test the hypothesis that natural calamities and seasonal fluctuations were one of the major reasons for defaulting on loans. Repayment schedules were overly tied to the annual cropping cycle and adverse conditions had reportedly interrupted the farmers' normal repayment schedules. The inclusion of the dummy variable, natural calamities, measured the influence of adverse conditions upon the farmer-borrowers of the cooperative societies. During the survey, most defaulters reported crop failures during the previous year due to drought. Large farmers in one locale reported that an unusually heavy rain storm had flooded their vegetable gardens shortly after planting. Other calamities included crop losses due to pests and excessive use of fertilizer. The regression coefficient was statistically significant and it had a direct relationship with overdue loans.

Overall, limited resources, fall in agricultural prices, and lack of agency supervision were not the major reasons why large farmers were unable to repay their crop loans. Although these factors were not the primary reasons, they were important secondary factors that adversely affected the farmers' repayment abilities. For example, nine large farmers and nine small farmers reported that their limited

resources were secondary reasons why they were unable to repay their loans. Six large farmers and seven small farmers claimed that a fall in agricultural prices adversely affected their repayment schedules. The farmers felt that the lack of cooperative supervision contributed to their defaults while only five farmers in both groups were adversely affected by the cooperatives' rigid terms of repayment.

Reasons, which were included in the "other" category, as important major causes for default were death in the family, injury to the farmer, and sickness in the family. Since there was no insurance against these problems, farmers reported that they were unable to meet their financial obligations and often had to go into debt to sustain themselves and their families.

Small farmers who were defaulters on their short-term loans reported similar repayment problems. For example, 22 small farmers were unable to repay their crop production loans. A fall in agricultural prices adversely affected three farmers, and limited resources in terms of labor and equipment also affected three farmers' repayment schedules. Other reasons accounted for 23 small farmers' inability to repay their crop production loans. Included in the "other" category were disease and medical expenses for the family; no marketable surplus; and the utilization of short-term loans for education, livestock purchase, litigation, and marriage. Late harvests were also a factor in some farmers' inability to repay their crop production loans. Although short-term loans can be converted into medium-term debts by the cooperative societies if extraordinary circumstances warrant it, this practice offers very little relief to the farmer.

Nevertheless, natural calamities were clearly major causes of overdue crop production loans for both small and large farmers. Under the circumstances, a crop insurance program, if properly supervised, would help farmers affected by adverse conditions over which they have no control.

The analysis in this chapter clearly supports two major hypotheses concerning the causes of overdue crop production loans. First, capital investments were definitely associated with overdues. This indicates that the cooperative societies were not correctly evaluating the farmer-borrowers' repayment capacity. Second, natural calamities were associated with overdue crop production loans. Farmers were unable to face adverse conditions, provide for their own subsistence, and repay their crop production loans at the same time. Finally, farmers who had a higher percentage of their operating expenses covered by short-term credit were more likely to default on their loans than those who had a lower percentage. This is further evidence that the cooperative societies were over-estimating the farmers' credit capacities in their scales of finance. Also, the inverse relationship between the net output per acre and overdue crop production loans suggests that an increase in the efficiency of farmers' crop production would reduce the amount of overdue loans and improve the financial operation of the cooperative societies and hence the recovery position of the district cooperative central banks.

In addition to the independent variables used in these regressions, other factors, which have not been included in this analysis, could explain a significant amount of the variability in the repayment

of crop production loans. For example, cultural values may explain why some farmers default on their crop production loans. In the past some politicians and government officials have encouraged debt relief programs and campaigned on promises of debt cancellation as a means of gaining support from the rural population. These misguided policies may have encouraged the practice of willful defaults by farmers since they may have become accustomed to having their debts written off by credit agencies.

Another factor in the overdue situation may be the farmers' lack of understanding of institutional credit. Since the beginning of the Green Revolution, the need for production credit has increased greatly and many farmers have been drawn into active participation in the cooperative credit movement. In Mysore State, few educational programs to explain the function of the cooperative societies and responsibilities of the members at the village level have been undertaken. The cooperative banks, the Cooperation Department, and the Cooperative Union have very limited resources with which to implement educational programs but the potential payoff for these programs is sufficient to justify greater investments in this area if the amount of overdue loans can be significantly reduced.

The inclusion of certain economic variables might improve the variation in outstanding crop production loans. If the sample of small farmers had been of sufficient size, a sub-sample of farmers with less than two and one-half acres, for example, could have been examined in terms of their potential for repayment of crop production loans.

Another economic variable which might explain a part of the overdue loan problem is the farmers' emphasis on the production of predominately cash crops like sugar cane versus other crops like ragi and paddy which are grown for both home consumption and sale. If farmers grow more food crops under traditional cultivation, they may consume most of their output and have little to repay their short-term credit. If additional socio-economic factors were examined, it would require more time and resources than were available for this study.

Farm management studies could be very useful in examining the repayment records of farmers growing local varieties of crops under traditional methods compared with farmers raising improved varieties of crops utilizing new technology and inputs. This type of information could be used to accurately determine farmers' credit needs and services with the aim of improving their repayment capabilities.

Some additional variables were included in the first run of the regression analysis--education, the amount spent on festivals each year, percentage of irrigated land, and operating expenses as a percentage of gross farm output. Since these variables were not statistically significant from zero at the 10 percent level and did not add any significant amount to the coefficient of multiple determination, they were dropped from the analysis that has been presented here.

CHAPTER VII

CONCLUSIONS AND IMPLICATIONS FOR FUTURE ACTION

Agricultural credit cooperatives operate in a perilous environment, face overwhelming risks, and are often inadequately equipped for the circumstances. Several authorities contend that the frustration facing these institutions lies in the erroneous assumption that credit, supervision, and new technology will transform traditional agriculture into commercial farming at an accelerating pace. According to preliminary reports of the Indian Fifth Five Year Plan (1974-79), cooperative loaning policies and procedures will be realigned to service small and marginal farmers, tenants, and sharecroppers more effectively in harmony with the overall national planning strategy of economic growth and social justice. To achieve these goals, an average 10 percent annual growth in agricultural credit and cooperative services available to farmers is planned.[1] If these objectives are to be realized, a hard look at past experiences and new approaches to cooperative activities is needed.

The general objective of this study has been to examine the factors associated with the repayment and non-repayment of crop production credit borrowed from primary agricultural credit cooperative societies. Cross-sectional data obtained through personal interviews

[1]"Co-operative Movement in India," India News, XI, No. 40 (January 5, 1973), p. 2.

of 136 sample farmer-member-borrowers of 35 primary agricultural credit cooperatives in Bangalore, Mandya, and Mysore Districts of Mysore State, India, in 1972 have been used. The sample farmers were categoriezed into small and large groups based on land ownership and subdivided into defaulters and non-defaulters to facilitate comparative analysis and formulate policy recommendations. These groups represent a broad spectrum of farming activities and cooperative credit use in southern Mysore State.

I. MAIN FINDINGS

A central objective of this study was to examine the relationship between the repayment of crop production credit and various characteristics of the sample farms and cooperative societies, as well as lending policies and administrative activities of the district cooperative central banks with a view toward identifying feasible programs that public agencies can implement to alleviate the problem of overdue short term loans in Mysore State. In this regard, the major conclusions of this study, based on data from southern Mysore, are:

1. Among all farmers, defaulters had fewer assets in land, livestock, equipment, and grain stocks than non-defaulters.
2. Also among all farmers, defaulters had larger average currently financed capital investments than did non-defaulters. Financial obligations to repay the principal and interest on both medium-term credit and crop production loans were greater than their earnings could support.

3. Defaulters had, on the average, a lower net output per acre for all crops than non-defaulters and less farm income. Also, defaulters, on the average, owned fewer irrigated acres than non-defaulters.
4. Natural calamities resulting in crop failures were a primary reason given by members of cooperative societies for defaulting on their crop production loans. However, supervisors of the district cooperative central banks were not convinced that crop failures were indeed the major reasons why their clients defaulted on their crop production loans.
5. The analysis of the Mysore farmers' total debt structure demonstrated that some Indian farmers did borrow for unproductive purposes on such occasions as marriages, deaths, births, and litigation, and that such spending was a major cause of their heavy indebtedness. However, there was no indication that farmers went into debt to finance annual festival expenditures.

The hypothesis that Indian farmers fail to meet repayment responsibilities since they do not receive incentives for prompt repayment was impossible to examine adequately within the scope of this study. Two possible explanations can be given for their apparent indifference. First, since a cooperative society must recover a percentage of its current short-term loan before the district cooperative central bank will issue a new loan, farmers may assume a wait-and-see

attitude in relationship to other borrowers, since they will not receive any credit if the cooperative defaults to the bank. This situation may appear to cooperative officials as indifference on the part of farmers to their repayment responsibilities. Another reason may be that farmers do not want to sell their produce at harvest time when prices are low, but instead they prefer to be overdue on their loans while they hold their produce in hopes of a better price. Also, cooperatives are often power bases for political factions, and part of the farmers' indifference may stem from present and past promises of debt relief from unscrupulous politicians.[2] Indifferent attitudes toward repayment displayed by large farmers who dominated the leadership of the cooperative societies may have been another important factor in explaining the present financial weaknesses of these societies.

II. RECOMMENDATIONS FOR IMPROVING REPAYMENT PERFORMANCE

The operation of agricultural credit cooperatives can be measurable improved if careful attention is given to selected pivotal issues--loan supervision, marketing and credit, share capital requirements, and educational activities. Solving production credit repayment problems cannot be done all at once, and today's solutions may not

[2]Mary C. Carras, "The Economic Determinants of Political Factionalism: A Case Study of an Indian Rural District," Economic Development and Cultural Change, XXI, No. 1 (October, 1972), pp. 118-141. Carras studied the structure of political factions in the Poona District of Western Maharashtra where the sugar cane cooperatives represented the power base of the rural parties which opposed the ruling urban based elites.

fit tomorrow's needs in a dynamically changing agriculture like Mysore's. Nor can all of the problems be solved at the top policy levels; cooperative officials at all levels need to be aware of the little improvements that they can make in the operations of agricultural credit cooperatives.

Loan Supervision

Poor loan supervision is closely linked with inadequate decision-making on borrowers' credit-worthiness. If the district bank's branch supervisors were in touch with only a small sample of the cultivator-borrowers, they could easily check on the farmers' utilization of their credit and report their findings to the bank's head office where the managers could be informed of farmers' repayment problems as they develop. The district banks should maintain farm management programs where the accuracy of the scales of finance and the farmers' repayment potential could be verified. This approach offers a chance to get away from the supervisors' preoccupation with recovery of short-term loans at the end of every harvest season and concentrate on finding the roots of the real repayment problems.

Marketing and Credit

Repayment schedules were closely tied to the annual cropping cycle and to the cooperatives' repayment plan. Farmers were expected to repay their loans immediately after harvest, and several cooperative officials suggested that their loan recoveries could be improved if they pressured the farmers to repay during this time. Unfortunately, demanding repayment immediately after harvest robbed the farmers of

potential gain on their crops since they were forced to sell when supplies were plentiful and prices were low. For example, during the interviews farmers gave the price of a quintal (220 pounds) of paddy when sold immediately after harvest at about Rs. 60, while the grain stocks which they had held for their own use were worth Rs. 5 to Rs. 10 more per quintal approximately three months after harvest. The district banks should develop a flexible repayment policy or link repayment directly with cooperative marketing.

Indian planners have integrated credit with marketing in an effort to improve the cultivators' income and insure production credit repayment. According to the theory behind the project, marketing societies would provide crop loans to the farmers against the pledge of their produce. Since prices at harvest time are usually depressed due to heavy arrivals of agricultural commodities in the market, farmers could hold their crops for the society. Then marketing societies can either store the produce if storage facilities are available and sell at a later date, or they can process the commodities and sell the semifinished products at a higher price. If the plan works, the marketing society must offer the farmers a "good" price for their commodities and be able to cover transportation, processing, handling costs, and profits in the selling price.

Storage facilities (godowns), which most of the cooperatives in Bangalore, Mandya, and Mysore Districts have in various stages of planning or construction, offer a way to increase the farmers' incomes, improve the cooperatives' repayment positions, and get away from the rigid repayment schedule fixed to the annual cropping cycle. Benefits

from the link-up of credit, marketing, and processing include: a stronger marketing position; assistance to the cultivator from planting to final marketing; and freedom from dependence upon the village middlemen and traders. Of course, the whole concept depends upon moral support from the farmers, the will to resist tempting offers from competitors, and sound financial management of the marketing cooperative.

Share Capital Requirements

The administrators of the cooperative banks should carefully evaluate the advantages and disadvantages of their share capital requirements. Also, they should consider making seasonal loans available for subsistence during the growing season.

If a farmer wants to avail himself of cooperative services, he must be a member of that society and contribute share capital to the society. Share capital serves to increase the cooperative's working capital, assuming that it is not financed entirely by outside institutions, and to link the members to the welfare of the society. If the share capital requirement to credit ratio is too high, the poorer members of the society will be excluded from participation since they cannot afford to purchase enough shares. For example, if a cultivator needs Rs. 500 per acre and if he operates four acres, his total credit needs would be Rs. 2,000. And if the share-to-credit ratio is 1:10, the borrower would need to raise Rs. 200 for share capital before he could receive his loan. One reason why larger farmers have secured a greater proportion of cooperative credit is

that they have been in a position to contribute substantially toward the share capital requirement and obtain credit against their contribution.

Basing production loans on past credit performances in the form of savings requirements or owned share capital to demonstrate "good" financial management only serves to raise the real interest rate on the loan. These savings requirements immobilize cash, which in effect forces the cultivator to borrow more credit than he needs and to pay interest on a larger sum than is necessary.[3] The gains from higher share capital requirements in terms of more loanable funds and greater member concern for the cooperative's success may be offset by the advantages of lower requirements such as easier access to cooperative credit by poorer, but potentially viable, farmers and greater participation in the cooperative activities by all members of the farming community. Unless the cultivator receives a rate of return on his share capital from the cooperative equal to the alternative investments, this attempt to link the welfare of the borrower with that of the cooperative is likely to fail in terms of achieving the goals of the cooperative movement.

The failure to receive credit for purposes other than what the cooperative bank has approved leads to defaults, the underutilization of credit, and the deliberate disregard for lending rules and regulations by borrowers.

[3]David N. Holmes, Jr., "The Economic Nature of the Credit Union and Its Role in Rural Credit Reform: A Case Study of Venezuela" (unpublished Ph.D. dissertation, University of California, Los Angeles, 1969), pp. 29-34.

> In theory, using the cost of cultivation as a basis for setting each farmer's credit limit is sound, but in practice this cost figure is an arbitrary one, which cannot possibly take into account the real cost needs of a specific farmer's acre of land. What happens is that the farmer is given either over or under financing for that particular crop, and more importantly, he is not given an incentive to expand the existing capability of the acre. Perhaps the most significant flaw in the present system is the complicated procedure by which the credit is parceled out. The delay and inconveniences these procedures impose on the farmers make them indifferent to the fact that a real service is being conferred on them. Instead they view the institution as another impersonal governmental institution whose total concern is paper work rather than something which they can depend upon for timely assistance.[4]

Educational Activities

While the previous discussion focused on changes directly related to cooperative credit practices within the existing structure, the following discussion focuses on some possible improvements on basic policies within the cooperative credit organization. The State Cooperative Union, through the district cooperative unions, should plan a vigorous educational campaign that would send a well qualified team of cooperative extension agents to every cooperative at frequent intervals.

When new cooperatives are established or old ones revitalized, the most important incentive for joining the cooperative is the ability to borrow money. All too often, the responsibility for collecting repayment is left to a paid secretary who may not clearly understand his responsibilities if he has not received adequate

[4]Bill Samsef, "Loan and Credit Extension for Defaulted Farmers" (report written by a Peace Corps Volunteer, Mysore, India, 1968), p. 3.

training and incentives for doing his job. A knowledge of cooperative principles and the rights and responsibilities of office holders and members is fundamental to the successful operation of a cooperative.

III. CREDIT LINKAGES TO THE CHANGING AGRICULTURAL ENVIRONMENT

Agricultural credit can be a potent force in agricultural development if it is tailored to specific farmer settings. The environmental factors which influence the success or failure of production credit include the land tenure system, the basic types of agricultural production, the marketing system, and the society's socio-economic objectives. When agricultural credit institutions ignore these underlying factors, their efforts are doomed to failure. The objective of this section is not to delve into the political, economic, social, cultural, and legal forces influencing agricultural institutions, but to emphasize the fact that possible solutions to the production credit repayment problems of small farmers revolve around a much broader framework than only lender and borrower practices.

Farmers can be classified according to their credit-worthiness and to the extent to which they need to be linked to other extension programs. The Small Farmers Development Agencies and the Marginal Farmers and Agricultural Laborers Agencies of India are in exactly this position. The aims of these agencies are to identify the problems of small farmers in their areas, prepare appropriate programs, and insure availability of inputs such as services and credit through existing institutions like cooperatives. The agencies can develop

realistic programs and supervise them for the benefit of the long-neglected small farmers and agricultural laborers. If, on the other hand, the agencies are used to channel funds to small farmers in the name of "social justice," without properly assessing the consequences, then the agencies may only continue many of the old mistakes associated with the cooperative movement.

One method of conceptualizing the effects of environmental restraints on agricultural credit needs and institutional forms is to classify agricultural producers on the basis of their technology using the main source of cultivating power as an indicator. Ted L. Jones used a three tier classification system to determine each group's level of credit use and cooperative services.[5] The "low" level of technology would represent agricultural production based on human power augmented by simple tools and cultivating traditional varieties of crops for essentially local consumption. This group utilizes only a limited amount of animal power and non-farm inputs. The "medium" level of technology would include simple animal-drawn equipment, more hand tools, and some improved varieties of crops for sale in both local and urban markets. A "high" level of technology includes a wide range of situations in which gasoline, oil, or electric power is used in combination with animal and human power and high yielding varieties of cash crops for national and export markets. Technology within this class covers a wide range of power requirements,

[5]Parts of this conceptual framework have been adopted from Ted L. Jones, "Agricultural Credit Institutions," in Institutions in Agricultural Development, edited by Melvin G. Blase (Ames, Iowa: The Iowa State University Press, 1971), pp. 168-183.

production inputs, and cooperative services. Figure 5 presents a way of organizing agricultural credit programs to fit different levels of technology and marketing organizations.

The marketing organization and the off-farm input supply environment are very closely connected with the farm technology. Isolated villages where surplus crops are transported to market by animal-drawn carts or on the backs of human bearers typify areas of "poor" classification. Transportation costs of non-farm inputs impede their widespread use, even when they are available. The traditional agricultural producers who characterize this group are dependent only to a limited extent on organized marketing and off-farm input supply systems.

A limited number of institutional marketing firms, often operating as monopsonistic buyers, typifies the "fair" classification. Highway and railroad transportation is limited, market supplies move irregularly, and off-farm inputs are scarce, or poor quality, and expensive.

The "good" classification applies when marketing services are well organized, transportation systems are well developed, and off-farm input supplies are readily available and reasonably priced in terms of productivity. Farms tended to be more specialized and diverse, and the amounts and types of credit, as well as related services, needed may differ considerably from one farmer or area to another.

The main issue will be how to formulate policies that will give small farmers access to credit and services. As farmers move away

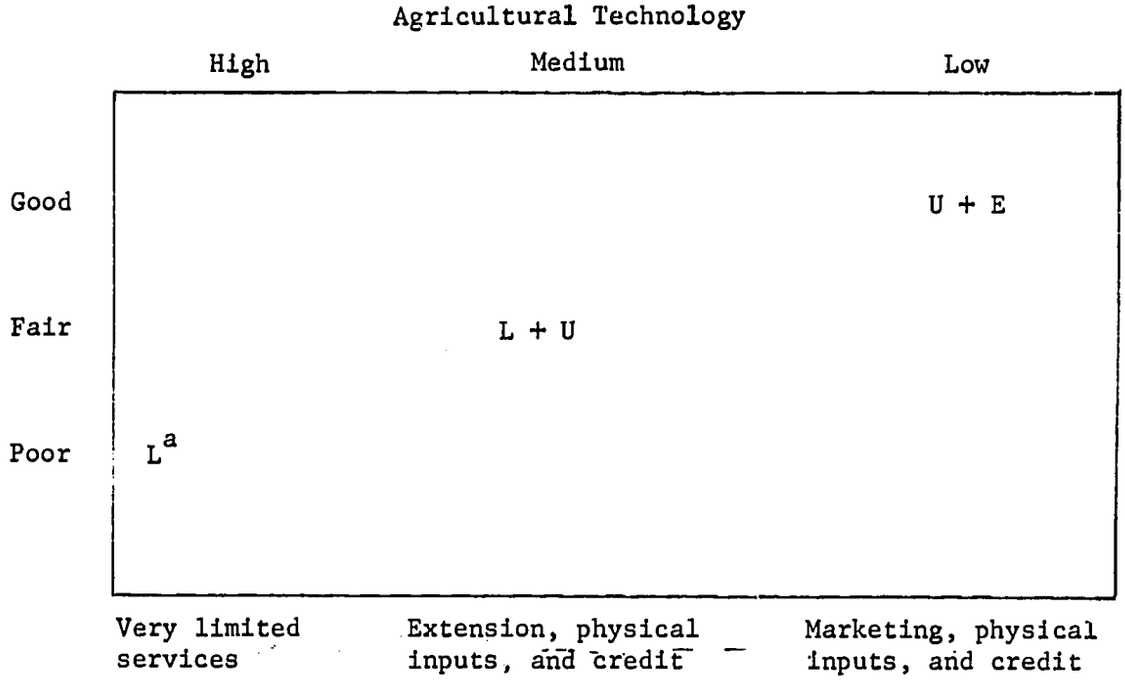

Figure 5. Tailoring Agricultural Credit Programs to Different Levels of Technology and Marketing Organizations.*

[a]L = crops for local food consumption; U = crops for urban food consumption; E = crops for export food sales.

*Adapted from Ted L. Jones, "Agricultural Credit Institutions," in Institutions in Agricultural Development, edited by Melvin G. Blase (Ames, Iowa: The Iowa State University Press, 1971), pp. 176-177.

from producing exclusively for local markets, they will develop greater dependence on off-farm supply systems for the timely availability of seeds, fertilizers, pesticides, repair parts, and veterinarian services as they modernize their operations. Government agricultural departments can help assure quality control of seeds, fertilizers, pesticides, and other agricultural inputs. If the complex input supply system from cooperatives, private dealers, and government agencies should break down, farmers will suffer serious setbacks and even physical hardships. They may even lose faith in the agencies that are trying to help them.

Farmers need specialized marketing systems as their output increases. Cooperative marketing societies, regulated markets, and national marketing boards may be needed to buffer price fluctuations and insure the farmer an equitable bargaining position.

Technical support from extension services is of paramount importance to modernized agriculture. They can also provide technical assistance as problems with new production methods arise and guide in the selection of farm enterprises. Their important role in developing commodity outlook information should not be overlooked.

The Mysore farmers covered in this survey appear to be in a period of transition, moving from a medium to high level of agricultural technology. Their marketing organization is aimed toward essentially local and urban centers with only a few specialized products such as silk, handicrafts, and souvenirs going into the export market. In this period of change, the most important cooperative

services for farmers are physical inputs, credit, and marketing services. The important role of cooperative extension activities and those of other supporting agencies should not be ignored.

This discussion has only skirted the surface of examining ways that differing and changing environments need to temper the design of credit programs and companion services. For a more comprehensive treatment of the entire agricultural modernization complex, two recent books by Arthur T. Mosher, Creating a Progressive Rural Structure and To Create a Modern Agriculture, give a more in-depth study of the needs of changing agriculture.[6]

Almost all developing countries can benefit from farm management studies with the aim of improving the use of agricultural inputs from cooperative societies. Inferences about correcting repayment problems associated with the administration of cooperative credit apply to Mysore State and to the entire country. Recommendations relating to agronomic causes of repayment problems may be modified to meet local conditions.

This study has shown new insights into the practices, events, and characteristics associated with credit repayment problems. Some of the results reinforce findings of other researchers and informal observations of those government officials acquainted with Mysore State. But some findings were inconclusive or inconsistent with the

[6]Arthur T. Mosher, To Create a Modern Agriculture (New York: Agricultural Development Council, Inc., 1971), and Creating a Progressive Rural Structure (Agricultural Development Council, Inc., 1969).

expected results, and the variables highlighted in analysis still did not explain a considerable portion of the overdue problem. Nevertheless, other research institutions like the Mysore University of Agricultural Sciences can utilize these findings to concentrate a sharper focus on particular aspects of repayment problems and possible remedies.

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APPENDIX A

TABLE A-1. Characteristics of 35 Cooperative Societies Classified According to Percentage of Short-Term Loan Overdues--Frequency Distribution of Key Variables

Item	Low 0-25% (13 co-ops)	Medium 26-50% (11 co-ops)	High 51-100% (11 co-ops)
Number of members in cooperative society[a]			
0-200	0	3	3
201-400	4	3	2
401-600	5	0	3
601 and above	0	1	0
Percentage of members who borrowed short-term loans from the cooperative[a]			
0-25	2	2	5
26-50	2	3	2
51-75	3	2	0
75 and above	2	0	1
Interest rate in percent			
9.0	12	8	3
9.5	1	3	8
Members' share capital in Rs.			
0-15,000	2	6	5
15,001-30,000	5	2	5
30,001-45,000	1	2	0
45,001 and above	5	1	1
Number of short-term loans in 1970-71 crop year			
2-50	1	3	6
51-100	1	4	2
101-150	2	2	2
151-200	3	0	1
201 and above	6	2	0
Amount of short-term loans in Rs.			
10,400-50,000	1	5	7
50,001-100,000	4	2	4
100,001-150,000	3	3	0
150,001 and above	5	1	0

TABLE A-1 (continued)

Item	Low 0-25% (13 co-ops)	Medium 26-50% (11 co-ops)	High 51-100% (11 co-ops)
Number of overdue loans			
0-20	9	4	4
21-40	2	3	4
41-60	2	2	0
61 and above	0	1	3
Amount of short-term loans overdue in Rs.			
0-20,000	9	5	3
20,001-40,000	4	3	5
40,001-60,000	0	2	1
60,001 and above	0	1	2
Amount of short-term loans overdue from big farmers in Rs.[a]			
0-20,000	11	5	6
20,001-40,000	1	2	1
40,001-60,000	0	3	2
60,001 and above	0	0	1
Amount of short-term loans overdue from small farmers[a]			
0-5,000	6	9	5
5,001-10,000	4	0	3
10,001-15,000	1	0	1
15,001 and above	1	1	1
Percentage of each cooperative short-term loan overdue from small farmers[a]			
0-25	2	4	4
26-50	1	0	1
51-75	2	1	0
76 and above	6	6	6
Percentage of total defaulters who are big farmers[a]			
0-25	8	1	5
26-50	2	2	2
51-75	0	2	0
76 and above	1	5	1

TABLE A-1 (continued)

Item	Low 0-25% (13 co-ops)	Medium 26-50% (11 co-ops)	High 51-100% (11 co-ops)
Percentage of each cooperative short-term loan overdue from all farmer-borrowers			
0-25	13	0	0
26-50	0	11	0
51-75	0	0	5
76 and above	0	0	6
Percentage of each cooperative short-term loan overdue from big farmers			
0-25	7	1	2
26-50	2	1	0
51-75	1	1	1
76 and above	1	8	8
Percentage of directors of the committee of management who are large farmers			
0-25	1	0	1
26-50	1	3	1
51-75	5	2	3
76 and above	6	6	6
Time gap between receipt of loan application and sanction of district cooperative bank in days			
9-15	6	4	7
16-30	4	7	4
31 and above	3	0	0
Years of education of the paid secretary			
7-10	2	5	6
11-14	11	4	4
15-19	0	2	1
Travel time from village to cooperative society in minutes			
15-30	8	3	7
31-45	0	1	0
46-60	2	2	3
61 and above	2	5	1

[a]Values for one or more cooperatives were not available.

TABLE A-2. Average Resource Level Distribution--By Farm Size--136 Farms in Three Districts--Mysore State, India, 1970-71

Item	Mysore District		Bangalore District		Mandya District		All Farms	
	Small (28)[a]	Large (13)	Small (23)	Large (36)	Small (20)	Large (16)	Small (71)	Large (65)
Age of farmer in years[b]								
Range--High	70	56	75	70	70	55	75	70
Low	25	25	26	26	35	28	25	25
No. of farmers with:								
21-40	13	6	9	8	7	8	29	25
41-60	13	7	9	23	12	8	34	35
61-80	2	0	4	4	1	0	7	4
Education of farmer in years								
Range--High	11	17	17	16	12	14	17	17
Low	0	0	0	0	0	0	0	0
No. of farmers with:								
0-5	23	8	20	16	16	9	59	33
6-10	4	3	1	15	1	4	6	22
11 and above	1	2	2	5	3	3	6	10
Size of household								
Males								
Range--High	7	9	5	15	8	9	8	15
Low	1	2	1	1	2	2	1	1
No. of farmers with:								
0-3	15	3	15	11	10	6	40	20
4-8	13	10	8	23	10	8	31	40
9 and above	0	1	0	2	0	2	0	5

TABLE A-2 (continued)

Item	Mysore District		Bangalore District		Mandya District		All Farms	
	Small (28)[a]	Large (13)	Small (23)	Large (36)	Small (20)	Large (16)	Small (71)	Large (65)
Females								
Range--High	6	15	10	15	5	6	10	15
Low	1	2	0	1	1	0	0	0
No. of farmers with:								
0-3	17	7	13	15	15	10	45	32
4-8	11	5	9	15	5	6	25	26
9 and above	0	1	1	6	0	0	1	7
Permanent servants								
Range--High	2	3	10	6	1	10	10	10
Low	0	0	0	0	0	0	0	0
No. of farmers with:								
0-1	26	5	21	16	20	7	67	28
2-3	2	8	1	14	0	6	3	28
4 and above	0	0	10	6	0	3	1	9
Land owned in acres irrigated								
Range--High	5	15	4	45	4	10	5	45
Low	0	2	0	0	0	0	0	0
No. of farmers with:								
0-3	22	2	22	23	18	9	62	34
3.1-7	6	8	1	8	2	5	9	21
7.1 and above	0	3	0	5	0	2	0	10

TABLE A-2 (continued)

Item	Mysore District		Bangalore District		Mandya District		All Farms	
	Small (28)[a]	Large (13)	Small (23)	Large (36)	Small (20)	Large (16)	Small (71)	Large (65)
Light irrigated								
Range--High	0	5	5	10	0.3	2.5	5	10
Low	0	0	0	0	0	0	0	0
No. of farmers with:								
0-2	0	12	22	31	20	15	69	58
2.1-5	0	1	1	4	0	1	1	6
5.1 and above	0	0	0	1	0	0	0	1
Rain fed								
Range--High	3.8	9	5	100	5	25	5	100
Low	0	0	0	3.2	0	0	0	0
No. of farmers with:								
0-2.5	26	5	14	0	14	4	54	9
2.6-5.0	2	5	9	6	6	2	17	13
5.1-7.5	0	2	0	20	0	3	0	15
7.6 and above	0	1	0	20	0	7	0	28
Assets owned in Rs.								
Land								
Range--High	180,000	178,000	45,000	284,000	54,000	100,000	180,000	284,000
Low	0	28,000	0	10,000	0	2,600	0	2,600
No. of farmers with:								
2,500 or less	4	0	6	0	4	0	14	0
2,501-10,000	5	0	9	1	8	4	22	5
10,001-17,000	7	0	5	2	3	1	15	3
17,001-25,000	4	0	1	7	4	5	9	12
25,001 and above	8	13	2	26	1	6	11	45

TABLE A-2 (continued)

Item	Mysore District		Bangalore District		Mandya District		All Farms	
	Small (28)[a]	Large (13)	Small (23)	Large (36)	Small (20)	Large (16)	Small (71)	Large (65)
Livestock								
Range--High	3,100	5,800	7,650	27,000	1,650	16,000	7,650	27,000
Low	0	800	0	600	0	900	0	600
No. of farmers with:								
500 or less	13	0	8	0	6	0	26	0
501-2,000	12	6	14	8	14	12	40	26
2,001-3,500	3	5	1	15	0	3	4	23
3,501-5,000	0	1	0	4	0	0	0	5
5,001 and above	0	1	1	9	0	1	1	11
Equipment								
Range--High	1,730	1,812	1,090	3,800	890	1,560	1,730	3,800
Low	0	390	0	60	15	14	0	14
No. of farmers with:								
250 or less	21	0	13	1	11	4	46	5
251-500	0	1	4	6	4	5	8	12
501-750	4	5	4	4	4	3	12	12
751-1,000	0	2	1	11	1	2	2	15
1,001 and above	3	5	1	14	0	3	3	21
Household utensils								
Range--High	2,400	5,000	1,630	10,000	1,910	4,000	2,400	10,000
Low	0	100	0	50	0	20	0	20
No. of farmers with:								
100 or less	9	1	11	1	5	5	25	7
101-500	16	4	10	15	10	7	36	26
501-1,000	0	1	1	7	4	3	5	11
1,001 and above	3	7	1	13	1	1	5	27

TABLE A-2 (continued)

Item	Mysore District		Bangalore District		Mandya District		All Farms	
	Small (28)[a]	Large (13)	Small (23)	Large (36)	Small (20)	Large (16)	Small (71)	Large (65)
Grain								
Range--High	800	3,000	1,750	5,850	1,710	800	1,750	5,850
Low	0	0	0	0	0	0	0	0
No. of farmers with:								
100 or less	16	2	10	6	11	6	37	14
101-500	8	2	8	4	6	7	22	13
501-1,000	4	5	4	9	2	3	10	17
1,000 and above	0	4	1	17	1	0	2	21
Currently financed investments in Rs.								
Range--High	21,200	37,000	12,500	51,000	5,000	15,000	21,200	51,000
Low	0	0	0	0	0	0	0	0
No. of farmers with:								
1,000 or less	16	3	14	8	18	10	48	21
1,001-5,000	7	3	6	12	2	1	15	16
5,001-10,000	1	2	2	7	0	3	3	12
10,001 and above	4	5	1	9	0	2	5	16
Annual family living expenses in Rs.								
Festivals								
Range--High	2,000	2,100	700	6,000	3,000	2,000	3,000	6,000
Low	50	150	50	0	5	0	5	0

TABLE A-2 (continued)

Item	Mysore District		Bangalore District		Mandya District		All Farms	
	Small (28)[a]	Large (13)	Small (23)	Large (36)	Small (20)	Large (16)	Small (71)	Large (65)
No. of farmers with:								
250 or less	13	1	13	6	9	7	35	14
251-750	11	2	10	14	8	3	27	19
751-1,200	3	5	0	11	1	1	4	17
1,201 and above	1	5	0	5	2	5	3	15
Education								
Range--High	2,000	13,000	7,000	12,000	1,000	1,000	7,000	13,000
Low	0	0	0	0	0	0	0	0
No. of farmers with:								
250 or less	19	6	17	16	14	10	50	32
251-750	7	2	3	8	4	3	14	13
751-1,200	0	1	0	7	2	3	2	11
1,201 and above	2	4	3	5	0	0	5	9
Other expenses								
Range--High	2,040	4,200	2,000	8,000	1,260	6,000	2,040	8,000
Low	0	0	0	0	0	0	0	0
No. of farmers with:								
250 or less	16	4	15	7	10	11	41	22
251-750	5	2	7	9	6	1	18	12
751-1,200	4	3	0	3	3	1	7	7
1,201 and above	3	4	1	17	1	3	5	24
Short-term loan in Rs.								
Range--High	2,500	5,000	3,500	25,000	5,200	2,000	5,200	25,000
Low	150	475	100	150	50	250	50	150

TABLE A-2 (continued)

Item	Mysore District		Bangalore District		Mandya District		All Farms	
	Small (28)[a]	Large (13)	Small (23)	Large (36)	Small (20)	Large (16)	Small (71)	Large (65)
No. of farmers with:								
250 or less	7	0	8	4	10	1	24	4
251-750	15	1	7	1	8	5	30	7
751-1,200	3	5	4	8	2	6	9	19
1,201 and above	3	7	4	23	1	4	8	35
Acres in crop production								
Range--High	5.3	17	7.0	45	5	18	7	45
Low	0.5	4	1.5	3	0	4.5	0	3
No. of farmers with:								
2.5 or less	18	0	9	0	8	0	35	0
2.6-5.0	9	2	6	3	12	2	27	7
5.1-10.0	1	10	8	14	0	12	9	36
10.1-15.0	0	0	0	11	0	0	0	10
15.1 and above	0	1	0	8	0	2	0	12
Operating expenses in Rs.								
Range--High	3,278	5,531	2,871	14,350	1,186	5,652	3,270	14,350
Low	63	1,435	65	375	0	0	0	0
No. of farmers with:								
250 or less	4	0	3	0	7	2	14	2
251-750	9	0	8	3	9	1	26	4
751-1,200	3	0	7	2	4	4	14	6
1,201-1,700	7	1	3	1	0	3	7	5
1,701-2,200	1	2	0	2	0	2	4	7
2,201 and above	3	10	2	28	0	4	5	41

TABLE A-2 (continued)

Item	Mysore District		Bangalore District		Mandya District		All Farms	
	Small (28)[a]	Large (13)	Small (23)	Large (36)	Small (20)	Large (16)	Small (71)	Large (65)
Gross farm output in Rs.								
Range--High	9,720	22,282	3,850	29,735	4,850	11,400	9,720	29,735
Low	230	2,930	77	315	132	0	77	0
No. of farmers with:								
1,000 or less	11	0	10	5	8	2	33	7
1,001-2,500	5	0	9	4	9	4	23	8
2,501-3,500	3	1	3	5	2	3	8	9
3,501-4,500	5	2	1	3	0	3	6	5
4,501 and above	4	10	0	19	1	4	5	36
Net output per acre in Rs.[b]								
Range--High	2,593	2,424	501	1,253	1,050	1,707	2,593	2,424
Low	-6,948	283	-2,889	-978	-1,844	-289	-6,948	-978
No. of farmers with:								
100 or less	16	0	17	15	6	3	39	18
101-200	0	0	2	3	5	5	7	8
201-300	1	1	1	6	0	1	2	8
301-400	0	1	2	2	1	0	3	3
401 and above	11	11	1	10	7	7	19	28
Annual farm income in Rs.								
Range--High	6,000	19,000	3,450	28,395	4,550	8,050	6,000	28,395
Low	0	600	0	0	0	0	0	0

TABLE A-2 (continued)

Item	Mysore District		Bangalore District		Mandya District		All Farms	
	Small (28)[a]	Large (13)	Small (23)	Large (36)	Small (20)	Large (16)	Small (71)	Large (65)
No. of farmers with:								
500 or less	13	0	14	8	11	2	38	10
501-1,500	5	1	4	7	5	5	14	13
1,501-2,500	2	1	4	2	3	3	9	6
2,501-3,500	3	2	1	6	0	1	4	9
3,501 and above	5	9	0	13	1	5	6	27
Annual nonfarm income in Rs.[b]								
Range--High	1,920	3,600	6,600	9,999	2,400	1,200	6,600	9,999
Low	0	0	0	0	0	0	0	0
No. of farmers with:								
500 or less	24	10	18	27	17	14	60	41
501-1,500	1	1	3	2	2	2	6	5
1,501-2,500	2	0	1	5	1	0	4	5
2,501 and above	0	1	1	2	0	0	1	3

[a]Number of farms by size.

[b]Values for one or more farmers were not available.

TABLE A-3. Average Resource Level Distribution--By Farm Size--Defaulters and Non-Defaulters--136 Farms in Three Districts--Mysore State, India, 1970-71

Item	Small		Large	
	Defaulter (56)[a]	Non-Defaulter (15)	Defaulter (49)	Non-Defaulter (16)
Age of farmer in years[b]				
Range--High	70	75	68	70
Low	25	28	25	28
No. of farmers with:				
21-40	20	9	18	7
41-60	31	4	28	8
61-80	5	2	3	1
Education of farmers in years				
Range--High	17	11	16	17
Low	0	0	0	0
No. of farmers with:				
0-5	47	12	24	9
6-10	4	2	16	6
11 and above	5	1	9	1
Size of household				
Males				
Range--High	8	8	10	15
Low	1	2	1	2
No. of farmers with:				
0-3	33	7	15	5
4-8	23	8	31	9
9 and above	0	0	3	2
Females				
Range--High	8	10	13	15
Low	0	1	0	2
No. of farmers with:				
0-3	38	7	25	7
4-8	18	7	19	7
9 and above	0	1	5	2

TABLE A-3 (continued)

Item	Small		Small	
	Defaulter (56)[a]	Non-Defaulter (15)	Defaulter (49)	Non-Defaulter (16)
Permanent servants				
Range--High	10	2	6	10
Low	0	0	0	0
No. of farmers with:				
0-1	53	14	23	5
2-3	2	1	21	7
4 and above	1	0	5	4
Land owned in acres				
Irrigated				
Range--High	5	5	15	45
Low	0	0	0	0.5
No. of farmers with:				
0-3	50	12	28	6
3.1-7	6	3	14	7
7.1 and above	0	0	7	3
Light irrigated				
Range--High	5	0.5	10	2.5
Low	0	0	0	0
No. of farmers with:				
0-2	55	14	43	15
2.1-5	1	1	5	1
5.1 and above	0	0	1	0
Rain Fed				
Range--High	5	5	100	30
Low	0	0	0	2
No. of farmers with:				
0-2.5	45	9	7	2
2.6-5.0	11	6	8	5
5.1-7.5	0	0	14	1
7.6 and above	0	0	20	8

TABLE A-3 (continued)

Item	Small		Large	
	Defaulter (56)[a]	Non-Defaulter (15)	Defaulter (49)	Non-Defaulter (16)
Assets owned in Rs.				
Land				
Range--High	180,000	54,000	220,000	284,000
Low	0	1,500	2,600	19,500
No. of farmers with:				
2,500 or less	12	2	0	0
2,501-10,000	16	6	5	0
10,001-17,500	14	1	3	0
17,501-25,000	7	2	10	2
25,001 and above	7	4	31	14
Livestock				
Range--High	1,650	3,300	15,500	27,000
Low	0	200	600	800
No. of farmers with:				
500 or less	24	2	0	0
501-2,000	29	11	19	5
2,001-3,500	2	2	18	7
3,501-5,000	0	0	4	1
5,001 and above	1	0	8	3
Equipment				
Range--High	1,650	1,730	1,950	3,800
Low	0	15	14	350
No. of farmers with:				
250 or less	39	6	5	0
251-500	5	3	8	4
501-750	10	2	9	3
751 and above	2	4	27	9
Household utensils				
Range--High	1,430	2,400	10,000	5,000
Low	0	50	20	100
No. of farmers with:				
100 or less	23	2	6	1
101-500	30	6	22	4
501-1,000	2	3	6	5
1,000 and above	1	4	15	6

TABLE A-3 (continued)

Item	Small		Large	
	Defaulter (56)[a]	Non-Defaulter (15)	Defaulter (49)	Non-Defaulter (16)
Grain				
Range--High	810	1,750	3,200	5,850
Low	0	0	0	0
No. of farmers with:				
100 or less	35	2	10	4
101-500	15	7	11	2
501-1,000	6	4	12	5
1,001 and above	0	2	16	5
Currently financed investments in Rs.				
Range--High	21,200	11,400	51,000	25,500
Low	0	0	0	0
No. of farmers with:				
1,000 or less	37	11	15	6
1,001-5,000	8	3	13	3
5,001-10,000	3	0	8	4
10,001 and above	4	1	13	3
Annual family living expenses in Rs.				
Festivals				
Range--High	3,000	1,000	6,000	4,000
Low	5	30	0	50
No. of farmers with:				
250 or less	27	8	10	4
251-750	23	6	17	2
751-1,200	3	1	12	5
1,201 and above	3	0	10	5
Education				
Range--High	7,000	500	13,000	5,000
Low	0	0	0	0
No. of farmers with:				
250 or less	40	10	27	5
251-750	9	5	9	4
751-1,200	2	0	8	3
1,201 and above	5	0	5	4

TABLE A-3 (continued)

Item	Small		Large	
	Defaulter (56)[a]	Non-Defaulter (15)	Defaulter (49)	Non-Defaulter (16)
Other expenses				
Range--High	2,040	1,200	6,040	8,000
Low	0	0	0	0
No. of farmers with:				
250 or less	31	10	18	4
251-750	15	2	9	3
751-1,200	5	3	5	2
1,201 and above	5	0	17	7
Short-term loan in Rs.				
Range--High	5,200	2,000	25,000	5,000
Low	100	100	150	200
No. of farmers with:				
250 or less	17	6	1	4
251-750	24	7	7	0
751-1,200	8	1	13	6
1,201 and above	7	1	28	6
Acres in crop production				
Range--High	7	7	30	45
Low	0	2.5	3	6
No. of farmers with:				
2.5 or less	34	1	0	0
2.6-5.0	16	11	7	6
5.1-10	6	2	27	5
10.1-15	0	0	8	5
15.1 and above	0	0	7	5
Operating expenses in Rs.				
Range--High	3,278	2,838	14,350	7,862
Low	0	65	0	625
No. of farmers with:				
250 or less	12	2	2	0
251-750	21	5	3	1
751-1,200	9	5	6	0
1,201-1,700	8	2	4	1
1,701-2,200	1	0	5	1
2,201 and above	5	1	29	13

TABLE A-3 (continued)

Item	Small		Large	
	Defaulter (56)[a]	Non-Defaulter (15)	Defaulter (49)	Non-Defaulter (16)
Gross farm output in Rs.				
Range--High	9,720	7,300	29,735	18,762
Low	77	1,404	0	2,640
No. of farmers with:				
1,000 or less	29	0	7	0
1,001-2,500	14	9	8	0
2,501-3,500	3	5	7	2
3,501-4,500	6	0	3	2
4,501 and above	4	1	24	12
Net output per acre in Rs.[b]				
Range--High	2,593	892	2,559	995
Low	-6,948	151	-549	-272
No. of farmers with:				
100 or less	21	0	21	4
101-200	9	1	5	1
201-300	2	4	4	0
301-400	3	4	2	5
401 and above	21	6	17	6
Annual farm income in Rs.				
Range--High	6,000	5,100	28,395	16,125
Low	0	0	0	704
No. of farmers with:				
500 or less	36	2	10	0
501-1,500	7	7	10	2
1,501-2,500	4	5	5	2
2,501-3,500	4	0	5	4
3,501 and above	5	1	19	8
Annual nonfarm income in Rs.				
Range--High	6,600	650	9,999	3,600
Low	0	0	0	0
No. of farmers with:				
500 or less	46	14	37	15
501-1,500	5	1	5	0
1,501-2,500	3	0	5	0
2,501 and above	2	0	2	1

[a]Number of farms by size.

[b]Values for one or more farmers were not available.

TABLE A-4. Scale of Finance for Major Crops Financed by Mysore District Cooperative Central Bank, 1972-73

Crop	Present Loan Scale		
	Cash	Fertilizer	Total
	---------- Rupees per acre ----------		
Ragi irrigated	100	100	200
Ragi dry	75	50	125
Paddy local variety	125	175	300
Paddy high yielding	150	350	500
Groundnut	180	100	280
Hybrid maize irrigated	125	307	432
Hybrid maize dry	100	195	295
Jowar local variety dry	50	50	100
Hybrid Jowar irrigated	125	292	417
Hybrid Jowar dry	125	168	293
Vegetables	100	200	300
Sugar cane	350	550	900
Mulberry irrigated	200	200	400
Mulberry dry	175	90	265
Hybrid cotton	225	375	600

Source: The Mysore District Cooperative Central Bank, Ltd., "Proceedings of the Meeting of the Technical Committee Held on 19.1.1972 at 11.00 A.M. in the Premises of the Bank." (Mimeographed.) In determining the above scale, the Committee recommended that a borrower who does not take the fertilizer component should be restricted only up to 50 percent of the cash component for dry crops and up to 40 percent of the cash component for irrigated crops.

TABLE A-5. Correlation Matrix, Total Short-Term Loan Outstanding and Various Independent Variables--132 Farms in Three Districts of Mysore State, India, 1970-71

	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9
Y	1.00	0.52	-0.01	0.37	0.05	0.24	-0.01	0.06	0.07	0.07
X_1		1.00	0.003	0.41	0.28	-0.05	0.07	0.26	-0.01	0.03
X_2			1.00	0.18	0.02	-0.07	0.05	0.04	-0.10	-0.05
X_3				1.00	0.37	-0.12	-0.17	0.39	-0.04	0.02
X_4					1.00	-0.07	-0.04	0.33	0.14	0.02
X_5						1.00	0.07	-0.12	0.04	0.02
X_6							1.00	-0.001	-0.04	-0.01
X_7								1.00	-0.05	-0.10
X_8									1.00	-0.07
X_9										1.00

Y = total short-term loan outstanding

X_1 = capital investments

X_2 = net output per acre

X_3 = farm assets

X_4 = annual consumption expenditures

X_5 = percentage of operating expenses covered by short-term loans

X_6 = debt-to-asset ratio

X_7 = family size

X_8 = age

X_9 = short-term interest rate

TABLE A-6. Correlation Matrix, Total Short-Term Loan Outstanding and Various Independent Variables--69 Farms in Three Districts of Mysore State, India, 1970-71

	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9
Y	1.00	0.11	-0.01	-0.05	0.03	0.74	0.06	0.17	-0.06	-0.05
X_1		1.00	0.06	0.22	0.09	-0.08	-0.06	0.08	-0.23	-0.05
X_2			1.00	0.23	0.09	-0.12	0.10	0.15	-0.01	-0.14
X_3				1.00	0.07	-0.15	-0.17	0.09	-0.001	-0.05
X_4					1.00	-0.07	-0.02	0.16	-0.01	-0.15
X_5						1.00	0.05	-0.09	0.001	0.001
X_6							1.00	0.08	-0.05	-0.06
X_7								1.00	0.17	-0.12
X_8									1.00	-0.16
X_9										1.00

Y = total short-term loan outstanding

X_1 = capital investments

X_2 = net output per acre

X_3 = farm assets

X_4 = annual consumption expenditures

X_5 = percentage of operating expenses covered by short-term loans

X_6 = debt-to-asset ratio

X_7 = family size

X_8 = age

X_9 = short-term interest rate

TABLE A-7. Correlation Matrix, Total Short-Term Loan Outstanding and Various Independent Variables--63 Farms in Three Districts of Mysore State, India, 1970-71

	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9
Y	1.00	0.53	-0.02	0.36	0.04	0.25	0.02	-0.03	0.16	0.11
X_1		1.00	-0.02	0.32	0.18	0.13	0.05	0.15	0.13	0.09
X_2			1.00	0.19	0.01	0.05	-0.11	0.001	0.19	-0.01
X_3				1.00	0.27	-0.03	-0.23	0.29	-0.02	0.08
X_4					1.00	-0.04	0.11	0.22	0.28	0.08
X_5						1.00	-0.05	0.17	0.24	0.07
X_6							1.00	0.15	-0.08	0.02
X_7								1.00	-0.13	-0.07
X_8									1.00	-0.03
X_9										1.00

Y = total short-term loan outstanding

X_1 = capital investments

X_2 = net output per acre

X_3 = farm assets

X_4 = annual consumption expenditures

X_5 = percentage of operating expenses covered by short-term loans

X_6 = debt-to-asset ratio

X_7 = family size

X_8 = age

X_9 = short-term interest rate

APPENDIX B

PRODUCTION CREDIT

CREDIT QUESTIONNAIRE: SCHEDULE FOR INSTITUTIONS

*Revised edition

Name of Institution _____ Questionnaire No. _____

Address _____

Location of Institution _____ level village _____
block _____
taluka _____
district _____
state _____

Name and position of official interviewed _____

Years of education _____

Name of area served _____ Estimated population of the area _____

1. Amount of fixed capital in loans Rs. __ Available for loans Rs. _____

2. What are the formalities involved in:

   A. Receiving the loan application for crop loans or other type (please specify type of loan _____)

Applicant's Initial Cost of Loan

Rupees	Application Form Fee	Form Filling & Registration Fees	Cost of Travel	Working Days* Lost Converted Rs./Day	Entertainment of People	Total
1-100						
101-200						
201-300						
301-400						
401-500						
501-1,000						
1,001-2,000						
2,001-5,000						
5,001-10,000						

*Working days lost includes time in obtaining the loan.

B. Steps in sanctioning or rejecting the loan include:

1. _____
2. _____
3. _____
4. _____
5. Other _____

3. What is the most usual time gap between receipt of loan application and sanction of loans? No. of days _____

4. What are the grounds on which loan applications were rejected, if any? (rate according to importance--(1) most important . . . (5) least important)

1. Available security not acceptable _____
2. Loans sought for nonproductive purposes _____
3. Procedural deficiency of the applications _____
4. Inadequate resources _____
5. Lack of up-to-date supporting documents _____
   i.e., rent receipts, land titles _____
6. Others, if any (specify) _____

5. What are the reasons for which pending loan applications could not be disposed? (rate according to importance--(1) most important . . . (5) least important)

1. Lack of response by applicants _____
2. Administrative delay _____
3. Lack of information in application _____
4. Errors in preparation of application _____
5. Others, if any (specify) _____

6. Do you think that there is further scope for reducing procedural difficulties? Yes _____ No _____ If yes, how? _____
_____

7. Is there any provision for supervision of loans granted by your institution? Yes _____ No _____
If yes, how many visits from a supervisor does a borrower receive?

Type of Loan	No. of Visits
Short term	
Medium term	
Long term	

8. Do you have experts to examine the plans submitted by loan applicants? Yes _____ No _____

9. What measures, if any, do you adopt for insuring implementation of the plans submitted by the applicants?

_____

_____

_____

10. Do you think loans granted by your institution increased output in your area in the last five years? Yes_____ No_____
If yes, please check the basis of your judgment: (rate according to importance--(1) most important . . . (5) least important)

1. Reports from your own officials _____
2. Reports from the loanees _____
3. Reports from government officials _____
4. Your impression _____
5. Others, if any (specify) _____

If no, why not?

1. Natural calamities _____
2. Utilization of loans for nonproductive purposes _____
3. Others, if any (specify) _____

11. A. Please state the following particulars of agricultural loans your institution granted last year:

Type of Loan	No. of Loans	Maturity Period	Interest Rate	Amount of Loans in Rs.	No. of Defaults	Amount Involved in Default in Rs.
Short term						
Medium term						
Long term						

B. Number of overdue loans from small farmers___ large farmers___ , and the amount in default from small farmers Rs. ___ large farmers Rs. ___

C. How do you process delinquent situations?

12. What, in your opinion, are the reasons for these defaults? (rate according to importance--(1) most important . . . (5) least important)

1. Natural calamities (crop failure) _____
2. Fall in agricultural prices _____
3. Rigid terms of repayment _____
4. Lack of agency supervision _____
5. Farmers' indifference to repayment responsibilities and penalties _____
6. Farmers' limited resources _____
7. Others, if any (specify) _____

13. How many members of the board of directors are small farmers and how many large farmers?
Small farmers _____ Large farmers _____

14. Do you think that the terms of repayment and security could be relaxed without raising the rate of default? Yes ____ No ____
If yes, how? _____

15. In your opinion, does the present method of evaluation underestimate ___, overestimate ___, or correctly evaluate ___, the credit-worthiness of applicants?

16. Do you consider the interest rate charged by your institution too high ___, too low ___, or about right ___?

17. Does your institution face difficulties in formulating its lending policies?

1. Lack of adequate powers Yes ____ No ____
2. Government interference Yes ____ No ____
3. Other, if any (specify) _____

18. Would you recommend more ___ or less ___ decentralization of your agency? Why? _____

19. Please consider the following particulars of loan cases under dispute because of default.

Year	No. of Cases in Dispute	No. of Cases Filed in Court
1971		

20. What percentage of the loans your institution sanctions are: repaid on schedule _____, eventually paid but not on schedule _____, or defaulted _____?

21. List the steps involved in seeking legal action against defaulters. What are the costs involved in each step?

1. _____
2. _____
3. _____
4. _____
5. Other, if any (specify) _____

22. In your opinion, what are the major problems involved in seeking legal action against defaulters? _____

_____

23. What measures do you suggest for insuring better repayment?

_____

_____

Date of interview _____

PRODUCTION CREDIT

CREDIT QUESTIONNAIRE: SCHEDULE FOR INDIVIDUAL FARMS*

*Revised edition

Name _____ Address _____ Date _____
(village & district)

1. Educational level _____

2. Family head: Male [ ] Female [ ] Age _ ___ No. of laborers ____

3. No. male household members__ 4. No. female household members ____

5. Land owned	No. of acres	Value in rupees	Doublecropped Yes	No
A. Irrigated	_____	_____	___	___
B. Light irrigated	_____	_____	___	___
C. Rainfed (dry)	_____	_____	___	___
6. Land rented				
A. Irrigated	_____	_____	___	___
B. Light irrigated	_____	_____	___	___
C. Rainfed (dry)	_____	_____	___	___

7. Wells or irrigation equipment

8. Livestock

A. Bullocks _____ C. Other animals _____

B. Milch cattle and buffaloes_____ D. Total value in rupees ___

9. Farm equipment

A. Bullock carts _____ Value in rupees _____

B. Plows _____ Value in rupees _____

C. Hand tools _____ Value in rupees _____

D. Other _____ Value in rupees _____

E. Total _____ Value in rupees _____

F. Quantity of grain stocks ____ Value in rupees _____

10. Value in rupees of total assets _____

11. Comparative financial status:

    A. Cash on hand now Rs. ____ Cash on hand last year Rs. _____

    B. Capital goods acquired in last year Rs. _____

    C. Total debts last year Rs. _____ Total debts presently Rs. _____

    D. Amount of loans made to other individuals Rs. _____
    Interest rate___ Purpose of loan ___ Amount repaid ____

12. Loan Statement

	Sources	Short Term	Medium Term	Long Term	Others (Specify)	Remarks
Government	Amount Year Purpose Interest Amt. repaid					
Cooperative	Amount Year Purpose Interest Repayment					
Commercial Bank	Amount Year Purpose Interest Repayment					
Others (specify) (money-lender, relatives or friends	Amount Year Purpose Interest Repayment					
Total amount						

13. Other sources of income Rs./year _____ Source--shop _____, Rent on land _____, labor _____, other _____

14. Have you borrowed any money for the following purposes in the last five years?

A. Marriage Rs. _____ B. Birth Rs. _____ C. Death Rs. _____

D. Festivals Rs. _____ E. Litigation Rs. _____ F. Education Rs. _____ G. Other (specify) Rs. _____ H. Total for consumption Rs. _____

15. Do you receive any incentives for prompt and early repayment of commercial bank loans Yes___ No___; Cooperative loans Yes___ No___; Government loans Yes___ No___; and from the moneylender Yes___ No___?

16. INVESTMENTS

Years	Purchase of land and its improvement	New wells and irrigation works	Repair of old wells	Purchase of tractors	Installation of pumping sets	Other equipment, implements

Investments (continued)

Years	Purchase of livestock	Special exps. on improved seeds & addl. manures	Non-agri-cultural productive purpose	Total value of investments

17. Have you ever been involved in legal action against you to recover a loan? Yes___ No___
If yes, how much did you pay for legal assistance? _____ How much money did you owe at the time of the legal action? _____

Have you ever been unable to repay your debts due to droughts, floods, or insect pests in the last five years? Yes ___ No ___

If yes, what were your major problems? _____

What solutions would you recommend for better repayment of your loans? _____

18. What in your opinion are the most important problems in repaying loans? (rate according to importance--(1) most important . . . (5) least important)

1. Natural calamities (crop failure) _____
2. Fall in agricultural prices _____
3. Rigid terms of repayment _____
4. Lack of agency supervision _____
5. Limited resources _____
6. Other, if any (specify) _____

19. LAST YEAR (FULL 12 MONTHS) CULTIVATION RECORD

Name of Crop		Cash expenses last 12 months					Total	Home	Marketed	
Crop	Acres	Labor	Seed	Water	Manure	Other	Yield	Use	Amount	Value

VITA

Glenn Clifford Webster Ames was born in Elmira, New York, on July 3, 1942. He attended public schools in Northern Pennsylvania, graduating from Wellsboro High School in 1960. He received a Bachelor of Science in Education degree from Mansfield State College in June, 1964. While a Peace Corps Volunteer in Venezuela from 1964-1966, he organized numerous educational programs for rural savings and loan cooperatives. He also worked with 4-H Clubs, the Ministry of Agriculture, and the Venezuelan Rural Development Commission.

Following the Peace Corps, he accepted a graduate teaching assistantship in American History at Northern Illinois University. He completed the Master of Arts degree in June, 1968, majoring in Latin American History. After graduation, he taught ninth and tenth grade social studies at Monroe High School, an inner city school in Rochester, New York.

He entered Graduate School at the University of Tennessee in September, 1969, under an AID 211(d) fellowship majoring in the economics of agricultural development. From April to July, 1972, Ames and his family were in Mysore State, India, where he collected data for his doctoral dissertation. He received the Ph.D. in Agricultural Economics in June, 1973.

He is married to the former Kathryn Jo Sandford of Pontiac, Illinois. They have one son, Adam "Pancho" Michael.