KIRINDI OYA IRRIGATION AND SETTLEMENT PROJECT:

THE PREPROJECT SITUATION RELATING TO AGRICULTURAL CREDIT

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ANANDA WANASINGHE

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ABSTRACT

This study on agricultural credit in the Kirindi Oya Project area was conducted to determine certain aspects of loan use and abuse that would be of importance both for monitoring of the project and in formulating plans for agricultural development under the project. In this context an effort was made to establish the patterns of credit use in relation to the different sources of credit available in the area. In particular, a fairly detailed examination of the utilisation of institutional credit was carried out. This included an inquiry into the extent and nature of defaulting. Exploration of the prospects for future agricultural development and consequent policy implications was also undertaken. Information for the study was collected from the banks servicing the area and from a sample of 149 farmers.

It transpired that institutional credit plays a minor role among farmers in the region. Only about five percent of all the lands cultivated under paddy is covered by these credit schemes. Institutional credit is utilised predominantly by farmers operating larger than average holdings. Access to low interest institutional credit appeared to promote the use of modern yield-raising inputs. The default rates and reasons given for defaulting are similar to those that obtain in the rest of the country. The more important reasons for defaulting appear to be constraints imposed by the agrarian structure, crop failure, deficiencies in the organisation for the disbursement and recovery of credit, misallocation of funds by farmers, and the attitudes of cultivators towards repayment of their debts.

Three factors have been identified as of importance in contributing towards the failure of institutional credit in the Kirindi Oya region. One is laxity in applying criteria to determine the credit worthiness of applicants. This makes credit available to many farmers who are unlikely to repay such loans due to various reasons. Another factor is that loans are granted to a large number of cultivators when the banks are

quite unable to monitor and supervise their activities with a view to recovering the debts. The third factor is that the laxity shown in the treatment of defaulters encourages increased defaulting in subsequent season. A significant observation relating to the above is that almost 75 percent of first time borrowers tended to default. This seems to be mainly due to lack of supervision regarding the utilisation of credit and poor follow-up action at harvest time for recovery of the loans.

Many borrowers had a tendency to obtain less than the maximum amount available from institutions. However, most farmers who borrowed from institutional sources also tended to borrow from non-institutional ones as well. This trend seemed to be due to the inadequacy of some of the components of institutional credit meant for certain specific operations and was especially true in the case of the component covering land preparation.

Another important observation, often also reported in other studies, is the near total absence of collaboration among the banks, other rural institutions and village level officers in the area. This contributes to the generally disorganised nature and the inefficiency of agriculture. It is moreover particularly deleterious for the smooth functioning of institutional credit schemes.

Some implications for agricultural development policy under the project have come to light as a result of this study. One is that the role currently played by institutions in the credit market of a major rice growing area has remained relatively insignificant and therefore there is great potential for effective and profitable intervention. Measures should be taken to ensure flexibility of policy in recovering overdue loans from defaulters and decentralising lending operations. Another implication is the necessity to remove the drawbacks arising from continued disregard for close and efficient credit supervision. Policy formulation must take into account the urgent need for activating this function, which will increase the productivity of credit and facilitate the recovery of loans. Rethinking of existing interest rates is needed to cover the additional costs of intensive supervision. The third important implication is the urgent need for a mechanism to ensure close cooperation among the different village level institutions and officers and meaningful integration of their activities without which all other efforts for rural development are likely to be impotent.

FOREWORD

The Agrarian Research and Training Institute has been commissioned to carry out the benefit monitoring and evaluation of the Kirindi Oya irrigation and Settlement Project by the Ministry of Lands and Land Development at the instance of the donor agencies viz: ADB and IFAD. This study on agricultural credit in the project area prior to project implementation was undertaken as a part of the monitoring and evaluation programme.

The large demand for agricultural credit in the area and the small role played by credit institutions in meeting that demand have been emphasised in this study. The authors point out that this wide institutional credit gap is a result of many factors arising mainly from the inflexibility of the institutional lending policies, the near total absence of credit supervision and the lack of coordination among the village level institutions. As the authors themselves admit most of the conclusions and recommendations are not novel. Some of the recommendations would no doubt require rethinking before implementation. However, this should not detract from the necessity to examine these recommendations carefully if institutional credit programmes are to be made meaningful. There also exists the possibility for these measures to be tried out in the project area on an experimental basis under the agricultural development programme of the project. If proved successful such measures would have wider applicability and contribute to the acceleration of agricultural development in Sri Lanka.

Miss Jayne Carr took part in this study as a Student Researcher of this Institute under the Natural Resources Studentship Scheme of the British Government's Overseas Development Administration. Mr. Ananda Wanasinghe, Research & Training Officer of this Institute and the Co-ordinator of the Kirindi Oya Monitoring and Evaluation Programme was responsible for the planning and supervision of field work and preparing the final version of the report for publication. My thanks are due to them for their efforts.

T.B. Subasinghe
DIRECTOR

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Our colleague Mr. P.J. Gunawardena gave helpful suggestions during the planning stages of the study. He also commented critically on the final drafts of the report. Detailed instructive comments on an earlier draft were given by Dr. Nimal Sandaratne of the Central Bank. We also received useful comments from Dr. J. Black-Mischaud, Mr. J. Farrington and Dr. T. Cusack; all of the Overseas Development Administration of the United Kingdom.

The drafts were typed by Miss Manori Melagoda and Mrs. Yasmin Bawa. Mrs. Soma Wijewardena typed the final work.

Without the wholehearted cooperation of the managers and staff of the branches of the Bank of Ceylon and the People's Bank at Hambantota and Tissamaharama, and the farmers in the sample, this study would not have been possible.

To all above we express our deepest gratitude for their respective contributions.

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Chapter One

INTRODUCTION

Agricultural credit is considered as an important instrument of change from subsistence to commercial farming. This is because under appropriate conditions credit increases the productivity of both land and labour. An important reason for low productivity is the inability of most farmers to adopt improved modern techniques which demand relatively high cash out-lay. Hence, Agricultural development programmes generally emphasise the need for credit to enable farmers to adopt these yield-raising techniques. These programmes however, are often not very successful. Wanasinghe (1982:8-14) has shown that agricultural credit programmes in Sri Lanka and most other less developed countries in the Asian region suffer from many problems. Non-repayment of loans is perhaps the most important among these. In Sri Lanka during the recent years this has been a particularly debilitating factor in the operation of agricultural credit schemes. The Kirindi Oya Project envisages the development of a considerable extent of land for agricultural production by small farmers. The success of the project in terms of agricultural production will depend largely on the adoption of modern techniques by these farmers. Therefore the operation of an efficient credit programme is important for the realisation of the project objectives. This study is intended to explore the current situation regarding agricultural credit in the project area and to suggest possible improvements in the light of vastly greater demand for credit that would arise with the implementation of the project.

1.1 LOCATION AND CLIMATE

The Kirindi Oya Irrigation and Settlement Project is located in Hambantota district in the south east dry zone of Sri Lanka, about 260 km from Colombo. It covers the lower basin of the Kirindi Oya and parts of the adjacent catchment areas and consists of approximately 21,000 hectares on both banks of the river. At the centre of the project area is the town of Tissamaharama which serves as the administrative and service centre for the Project. (See Fig. 1.1).

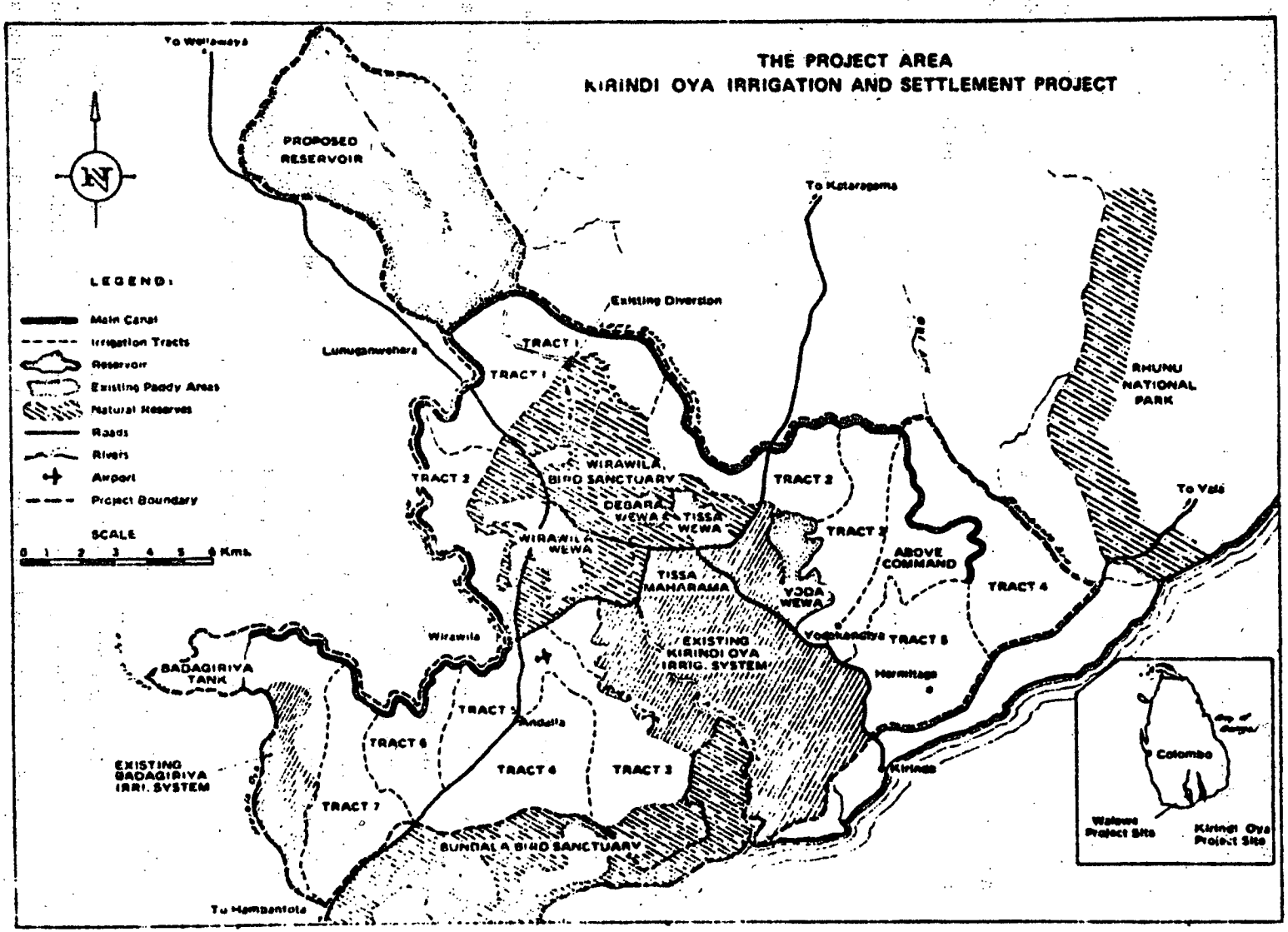
The project area lies in one of the driest parts of Sri Lanka, receiving an average annual rainfall of 1,077 mm. This precipitation is very unevenly distributed between two distinct seasons. Seventy four percent of the rainfall is received during the wet season *(maha)*. The wettest month is November which averages 207 mm of precipitation and the driest month is August which averages 31 mm. This relatively harsh climate and the poor groundwater resources of this region reflect on the socioeconomic conditions of the people, and the project area contains probably some of the poorest villages in the country. The storage and efficient distribution of adequate quantities of water is therefore a prerequisite for stable and productive year-round agriculture.

1.2 AGRICULTURE

Settled cultivation is at present mainly confined to the south central tracts of the project area, which benefit from irrigation facilities provided under five ancient reservoirs renovated relatively recently. (Fig. 1.1 the existing Kirindi Oya Irrigation system). These major reservoirs obtain their supply of water from a diversion structure and canals located upstream of the reservoirs on the Kirindi Oya river. Within the boundaries of the existing Kirindi Oya Irrigation system, paddy (rice) is grown on the irrigated lowlands. Lowlands with an assured supply of water are very productive and regularly surpass the national average in yields. In the irrigated region, to the south of the project highland and homestead areas are mostly devoted to perennial tree crops such as coconuts and mangoes.

To the east and west of the above area, cultivation is dependent on the water stored in small village tanks or on rainfall alone. The

Figure 1.1


THE PROJECT AREA
KIRINDI OYA IRRIGATION AND SETTLEMENT PROJECT
To Wellawaya
PROPOSED RESERVOIR
To Kataragama
Existing Diversion
LEGEND:
Main Canal
Irrigation Tracts
Reservoir
Existing Paddy Areas
Natural Reserves
Roads
Rivers
Airport
Project Boundary
SCALE
0 1 2 3 4 5 6 Kms.
Lunugamwehera
TRACT 1
TRACT 2
TRACT 3
TRACT 4
TRACT 5
TRACT 6
TRACT 7
RHUNU NATIONAL PARK
WIRAWILA BIRD SANCTUARY
DEGARA WEWA
TISSA WEWA
WIRAWILA WEWA
TISSA MAHARAMA
YODA WEWA
ABOVE COMMAND
Wirawila
BADAGIRIYA TANK
EXISTING KIRINDI OYA IRRIG. SYSTEM
Hambantota
Hermitage
Kirinda
EXISTING BADAGIRIYA IRRI. SYSTEM
BUNDALA BIRD SANCTUARY
To Hambantota
To Yala
Colombo
Walawe Project Site
Kirindi Oya Project Site

village tanks are entirely rainfed and have only small catchments. Under these conditions paddy cultivation in the lowland area is almost exclusively restricted to the *maha* (major) season, with the land being left fallow during the *yala* (minor) season. In most years an insufficiency of tank water even during the *maha*, results in depressed yields due to water stress. The highlands which generally comprise homesteads and waste lands are not widely cultivated.

Shifting cultivation *(chena)* is practised extensively on the unirrigated uplands, mostly in scrub and jungle, on the periphery of the existing Kirindi Oya irrigation system. Land is cleared by slash and burn techniques and subsequently abandoned for fresh areas after two or three cultivation seasons. Under this system subsidiary food crops such as pulses, vegetables and chillies are grown in *maha*. In *yala* gingelly (sesame) is the major crop. *Chena* cultivation is an integral part in the agricultural activities of farm households in the project area which do not own or have access to paddy lands. It also provides a secondary source of income to approximately 20 percent of farmers engaged in paddy cultivation in the irrigated tracts.

Access to institutional credit is virtually confined to those who cultivate paddy under the existing Kirindi Oya Irrigation system. A regular water supply ensures relatively good yields whenever recommended agricultural practices are adopted/ involving a high cash outlay on fertiliser and agro chemicals. On the other hand, farmers cultivating paddy or subsidiary food crops under minor irrigation and rainfed conditions have little or no access to institutional credit. The high risk of harvest failure on these lands discourage the adoption of cultivation practices that involve high cash expenditure. Though loan schemes exist for paddy cultivated under rainfed and minor irrigation conditions, as well as for subsidiary food crops the credit extended by lending institutions in the project area has been very limited.

1.3 THE PROJECT

The Kirindi Oya Project envisages the development of the agricultural potential of this area primarily through the provision of irrigation water and by settlement of farm families. This aims at achieving an increase of both agricultural production and employment, leading to improved rural incomes and standards of living. The project envisages

the construction of a large reservoir that will augment the supplies of the existing tanks and provide irrigation to new lands. The total area that will benefit from irrigation is about 13,000 hectares. Of this extent nearly two thirds or 8,400 hectares, will be new lands on which two crops a year can be cultivated. On these tracts about 8,300 families will be settled. They will be provided with basic infrastructural facilities such as roads, schools, medical centres, and supply facilities. In the project area improved agricultural extension, input supply, marketing, and credit facilities have also been planned for.

1.4 THE STUDY

The availability of agricultural credit is expected to increase the financial resources which a farmer can apply for the operation and development of his farm. For this reason, credit is potentially an important instrument for the improvement of agricultural production and farm incomes. The need for credit is related both to the availability of profitable investment opportunities that exceed farmers own cash reserves, and to the nature of agricultural activity, which involves a waiting period between expenditure for production inputs and income from sale of harvest. Thus, credit has come to be regarded as an important support service for farming. It is an essential component of any agricultural development scheme which provides farmers with new investment opportunities.

The appraisal report of the Kirindi Oya Irrigation and Settlement Scheme envisages that once the project reaches full development and irrigation water begins to flow, agricultural credit requirements in the area will grow substantially. In particular, there are three aspects of the project which would have a direct bearing on the need and demand for credit. These are as follows:

1. Land settlement - The proposal to settle an additional 8313 farm families in the lowlands of the project area increases by almost threefold the number of farm families cultivating paddy.

2. Provision of irrigation facilities for new lands and the rehabilitation of existing irrigation works - A reliable and sufficient supply of irrigation water, would

encourage the growing of high yielding varieties requiring in turn larger inputs of fertiliser, agrochemicals and labour. The financing of these requirements would call for an extended supply of credit. Additionally, an improved and expanded supply of irrigation water will increase the extents of lowlands which can be cultivated with paddy in both the *yala* and *maha* seasons. A double cropping cultivation system would expand agricultural credit requirements still further.

3 Introduction of a new crop - It is proposed to establish the cultivation of cotton under irrigation in highland areas in the *yala* season. To enable and encourage farmers to adopt this crop and the concomitant cultivation techniques which are largely unfamiliar to them, the provision of cultivation credit will certainly be necessary.

The changes in the demand for credit that these three components of the project will precipitate are not yet precisely known. Whereas the appraisal report envisages an expansion of the existing credit system,the credit dusbursements in the past had declined steadily due to large scale defaulting in these areas. Those presently using credit are limited to a small minority of paddy cultivators owing to the ineligibility of large numbers of farmers due to default. The low levels of loan recovery in the project area and in Sri Lanka, generally on which the Central Bank (1980) had reported cause some concern for the future organisation and development of credit facilities. Low levels of loan recovery erode the resource base of the financial institutions. Unrecovered loans constitute a hidden subsidy to defaulting farmers. If the provision of agricultural credit is to be successfully undertaken in the area and contribute to raising agricultural production and farm incomes, it is important to understand the factors accounting for the poor performance of the present loan schemes. It is with this aim that the present research is undertaken.

This study constitutes a detailed examination of institutional lending activities in the project area over the period 1973-1981. Although there are loan schemes for a number of crops, emphasis will be placed on disbursements for paddy cultivation, which is the

predominant, agricultural activity in the project area. In examining various aspects of credit in paddy cultivation, the central concern of this study is the problem of loan repayment and the causes of default. However, in identifying and quantifying different features of this problem, findings emerge which are relevant to a wide range of issues in the provision of agricultural credit facilities beyond the Kirindi Oya Project area.

1.5 DATA SOURCES

This study makes use of three main sources of data. Aggregate statistics provided by the lending institutions on the disbursement and recovery of paddy cultivation loans are used to examine credit transactions over the period 1973-1980. To build up a more detailed picture of transactions in the study area and to provide a sampling framework for the field survey, loans granted during *maha* 1978/79, *yala* 1979, *maha* 1979/80 and *yala* 1980 were followed up individually in the loan ledgers and loan application forms at the lending institutions.[1] The third important source of detailed information was farmers' responses to the agricultural credit survey carried out in the project area. In this survey, details concerning the use of institutional loans and the reasons for nonrepayment of loans were collected from the borrowers themselves. It also provided information that made possible a comparison between non-defaulting, defaulting, and non-borrowing farm households, and supplied details regarding how these same households financed cultivation in *maha* 1980/81.

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1 In some instances examination of loan ledgers highlighted discrepancies between these figures and aggregate loan statistics. This problem was particularly evident at the Bank of Ceylon, where the closure of two branches at Weerawila and Yodakandiya in 1979 and transference of business to a newly opened branch in Tissamaharama has created some disorder in record keeping. For both *maha* 1978/79 and *maha* 1979/80, aggregate loan statistics showed a larger number of loans than could be traced in the loan ledgers. But, since the amount of credit disbursed shows only minor discrepancies between the two data sources, it would appear that in this instance the aggregate statistics are in error. Accordingly when the aggregate loan statistics are used in the analysis in chapter three, the number of loans granted by the Bank of Ceylon has been amended to confirm with the above findings.

1.6 OUTLINE OF THE STUDY

Chapter two reviews the loan repayment problem by examining the disbursement and recovery of paddy cultivation loans under various credit schemes that have been implemented in Sri Lanka. Chapter three analyses the changing nature of lending activities in the Kirindi Oya Project area since the introduction of the new comprehensive rural credit scheme in 1973. Details of credit transactions in the project area over the period *maha* 1978/79 - *yala* 1980 are used in the fourth chapter to consider the relative importance of different lending agencies in the area, spatial variations in the default rate, paddy holding size of farmers participating in the loan scheme, and variations in loan amount per hectare that farmers had borrowed. In chapter five farmers responses in the agricultural credit survey conducted in the project area are used to make a comparison between nondefaulting, defaulting and nonborrowing farm households. Reasons given for default by farmers themselves are also examined in this chapter and deficiencies in the lending institutions identified. Chapter six focuses on the means by which farmers financed their paddy cultivation in *maha* 1980/81. It provides an insight into the use and adequacy of institutional loans, and demonstrates how defaulting farmers finance cultivation when they are ineligible for institutional credit. Finally, in chapter seven the findings of the study are summarised and their implications for the development of agricultural credit in the Kirindi Oya Project area are identified.

Chapter Two

A REVIEW OF THE FARM LOAN REPAYMENT PROBLEM IN SRI LANKA

Government sponsored credit schemes for agricultural development in Sri Lanka have been in existence since 1911. However, noninstitutional sources continue to play the dominant role in the credit market of the small farm sector. Commencing in the late 1940s the government make attempts to improve and expand credit to this sector. The objective in doing so has been twofold. On the one hand, the provision of credit at a subsidised interest rate has been an attempt to release the small farmer from the clutches of the money lender, who often charged usurious interest rates, which was thought to be an important cause of the indebtedness common amongst small farmers.[1] On the other hand, since these fresh credit schemes began in a situation of deteriorating food supply, government intervention in rural financial markets has been strongly linked to a concern for agricultural development and increased food production. Embodied in the argument that agricultural credit plays a leading role in increasing agricultural production is the contention that operators of small farms being poor, do not have sufficient savings to purchase inputs essential for increasing yields and that credit would enable them to use these inputs.

Despite various developments in the provision of institutional credit (including the extension of the institutional framework, increasing the volume of credit and the granting of loans for a larger number of crops). Sri Lanka has several times repeated an unfortunate credit cycle, a recurring feature of which was the inability

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1 Noninstitutional sources accounted in 1957 and 1969 for 92.2 percent and 75 percent of rural credit respectively. (Department of Census and Statistics, survey of rural indebtedness 1957 and Central Bank of Ceylon, Report of Survey rural credit and indebtedness, 1969).

to recover a significant proportion of funds loaned. As pointed out by Dudley Seers (ILO 1971), "funds are loaned on a generous scale to cover production costs without supervision. They often do not yield the output to recover repayment because they finance inappropriate techniques or even consumption needs, weddings or payment to village money lenders. Some borrowers are promised rescheduling as a political gesture and so they delay repayments. Local cooperatives default on their own debts and become defunct, so that not only the defaulting farmers but even their innocent neighbours are unable to borrow. Credit dries up, fertiliser and pesticide use decline and the innocents decide they too might as well default next time. The government winds up the scheme, then starts a new one and the cycle repeats again."

This weakness of rural credit schemes has undermined their financial viability and in recent years the supply of institutional credit to producers has diminshed substantially. This is evident from a recent ARTI credit study in Kurunegala district and will be further demonstrated by time series data presented in the following chapter on credit transactions in Kirindi Oya Project area.

If small farmer credit is to be seriously undertaken in Sri Lanka and fostered as an important contribution to national development, then a resignation to the inevitability of nonrepayment is clearly out of place. This requires an effort to be made to understand the factors that lead to default and the development of appropriate policies for solving the problem.

The remainder of this chapter reviews various credit schemes that have been implemented in Sri Lanka and examines the findings of earlier surveys of default. This approach will provide the necessary background for a detailed consideration of the disbursement and recovery of cultivation loans in the project area.

2.1 INSTITUTIONAL CREDIT SCHEMES IN SRI LANKA 1947-1980

We may describe the first four decades of institutional credit since 1911 as a period of experimentation and "hesitant

consolidation."[1] The late 1940s saw a reawakening of interest in state sponsored agricultural credit. This was accompanied by relatively more vigorous government intervention in the agricultural credit market. The following brief survey traces the evolution of the institutional credit system during this later period. This provides a perspective that will assist in understanding the magnitude of importance assigned to agricultural credit and the nature of the problem of default in Sri Lanka. The time period under consideration is divided here into six phases, based on distinctive characteristics of the loan operations in each period.

1947/48 - 1952/53

During this period of institutional credit, loans were channelled to the farmer through the newly established cooperative agricultural productivity and sales societies. These societies were financed by the government through the Department of Land and the risk of default was borne by the government. Credit worthiness of a farmer was decided on the basis of his previous record of repayment. Over this period Rs. 45.36 million were disbursed as loans of which 41.2 percent had to be written off as defaults.

1953/54 - 1956/57

During this period the administration of the credit scheme was taken over by the Department of Cooperative Development. The principle of corporate responsibility was introduced, and thereby cooperatives which had loans in default and did not make good these defaults were not entitled to borrow on behalf of their members. There was a steady increase in the annual volume of loans granted and defaults were only six percent of Rs. 112.2 million disbursed. This is the lowest default rate in the history of institutional credit in Sri Lanka and suggests perhaps, the value of fixing cooperate responsibility for loans.

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1 For details see Sumanasekera Banda (1976).

1957/58 - 1966/67

After 1957 the responsibility for administering the credit scheme was transferred to the newly formed Department of Agrarian Services. As long as the principle of corporate responsibility was maintained in the first three years, the default rate was kept within 10 percent of the amount disbursed. However by 1962/63 the amount of credit disbursed had declined to half of its 1956/57 level as 30 percent of the cooperatives had become defaulters and therefore ineligible for credit under the scheme. Hence, although the repayment rate was good compared with later seasons, the Ministry of Agriculture, Food and Cooperatives was concerned about the declining coverage of the programme. The general thinking was that the lack of credit facilities would jeopardise the scheme designed to accelerate the adoption of improved agricultural practices. Based on the recommendations of a committee appointed to examine the possibility of expanding credit and the problem of defaults, credit was liberalised in 1963/64 and the annual volume of disbursement increased. At this stage it was proposed to ensure the recovery of loans by linking credit to marketing. Borrowers had to make a commitment to sell a quantity of paddy to the cooperative under the guaranteed price scheme, equivalent in value to the loan taken. However, this plan was never fully implemented. Having released the cooperatives from the corporate responsibility to recover loans and with no effective loan recovery mechanism, the principle of individual farmer responsibility was restored. The result was that by 1966/67 the recovery rate had fallen to 56 percent of the amount disbursed.

1967/68 - 1972/73

In September 1967, a new agricultural credit scheme was introduced. Under this scheme credit was to be financed by a state sponsored bank - the People's Bank which had a supervisory function over the cooperatives. The disbursement of credit by a commercial bank rather than a government department, was expected to generate a greater sense of responsibility on the part of farmers to repay loans. The Central Bank of Ceylon provided refinance facilities and gave a guarantee to reimburse 75 percent of defaults. As a deterrent against default the rice ration coupons of a farmer's household were to be pledged as security for the loan taken. When a farmer did not repay a loan the ration coupons were

credited to the loan account. Under this scheme agricultural extension officers, the cultivation committee and the committee of the cooperative society were expected to supervise the utilisation of credit by the farmers.

In order to make the new scheme as effective as possible and ensure a high rate of participation by farmers, the government decided to waive all outstanding debts. Thus the government, concerned for the coverage of the scheme, liberalised credit for the second time in four years. The amount of funds loaned and recovered for paddy cultivation since 1967 is shown in Table 2.1. In the first year of operation of the new scheme, the volume of credit disbursed was double that of the previous season and the repayment level improved greatly rising to a national average of 86 percent. However, as pointed out by the Central Bank survey of defaults (1972), there were variations across the island. Certain districts such as Kandy, Polonnaruwa, Kegalle and Badulla maintained very high levels of repayments for the first few years of the scheme, whereas districts such as Anuradhapura, Kurunegala and Hambantota showed very poor repayment levels after the first year. The explanation given in the Central Bank study for this variation, was the relatively better development of cooperatives in some parts of the country. However no rigorous assessment of the variability of cooperative performance has come to the authors' notice.

Although with the change of government in June 1970 the hypothecation of rice ration coupons was terminated, this discontinuation does not seem to have had a noticeable bearing on nonrepayment. The recovery rate remained quite stable around 60 to 65 percent of loans disbursed (see Table 2.1).

1973/74 - 1977/78

In 1973 agricultural credit was brought under a new programme called the Comprehensive Rural Credit Scheme (CRCS). A new feature of the scheme was its recognition that a farmer's credit requirements were much wider than his financial requirements for cultivating crops. Farmers were therefore allowed to apply for consumption loans. Also, instead of a uniform credit limit covering the entire island, different

Table 2.1 - Lending for Paddy Cultivation 1967-1980

Cultivation season	Amount granted	Amount recovered	Percent recovered
	Rs 000'		
Maha 1967/68	61.42	59.91	86.0
Yala 1968	11.29	9.83	87.0
Maha 1968/69	45.80	28.54	62.3
Yala 1969	9.87	8.11	82.2
Maha 1969/70	39.35	20.69	52.6
Yala 1970	12.36	8.79	71.1
Maha 1970/71	23.46	12.94	55.2
Yala 1971	5.82	5.07	87.2
Maha 1971/72	23.96	15.43	64.3
Yala 1972	6.67	5.42	81.3
Maha 1972/73	20.20	13.56	67.1
Yala 1973	8.03	5.17	64.4
Maha 1973/74	85.81	44.07	51.36
Yala 1974	25.24	15.62	61.87
Maha 1974/75	74.80	35.24	48.5
Yala 1975	11.08	8.69	78.4
Maha 1975/76	56.80	31.07	54.7
Yala 1976	17.70	13.26	74.9
Maha 1976/77	86.25	37.66	43.0
Yala 1977	15.95	10.15	63.7
Maha 1977/78	415.71	90.96	21.9
Yala 1978	31.81	20.23	63.3
Maha 1978/79	46.21	33.79	73.1
Yala 1979	13.78	10.83	78.6
Maha 1979/80	46.07	30.37	69.9

Source : People's Bank, Bank of Ceylon, Hatton National Bank.

scales of finance per acre of crop cultivated were imposed for different agroclimatic zones. The programme was also expected to mature into a self-financing one by increasing the mobilisation of savings.

The People's Bank continued to use the cooperative societies and it's rural bank network for administering the programme. In 1973, another semi government commercial bank - the Bank of Ceylon - began to provide agricultural credit to farmers under this scheme. It did not use the cooperatives but lent directly to farmers through sub branches of the bank located in Agrarian Service Centres. Administratively the bank was expected to work closely with members of the Agricultural Productivity Committee and extension officers who had their offices at these centres. This promised to provide much better coordination among the several village level officers involved in agricultural development. Another innovation was the introduction of agroidentity cards which contained details of the farmers land holding and past credit record. These allowed the applications for loans to be processed faster.

Although the introduction of the comprehensive rural credit scheme has been hailed as a radically new scheme (Marga 1975), the programme operated basically as before with respect to method of disbursing credit and recovering funds. The loan had both a cash and a kind component and was released in stages. The first instalment was given for land preparation, seed paddy (in kind), transplanting, and weeding. The second instalment was supplied only in kind - fertiliser, weedicide and pesticides; and the third was given in cash for harvesting. Credit worthiness of a farmer was based on the single criterion of his not being a defaulter.

As can be seen from Table 2.1 the repayment performance in this period was little different from that of earlier years. Recovery rates were consistently poor leading to a decline in the number of borrowers eligible for credit.

In *maha* 1977/78 the incoming government repeated a gesture familiar to farmers. Agricultural credit was liberalised and loans given to defaulters. Whilst this generated a record level of loan disbursement, it also resulted in an extremely unsatisfactory recovery

rate. Not even 20 percent of loans disbursed have been recovered to date.

1978/79 - 1980/81

The alarming position with respect to loan recovery after *maha* 1977/78 led to the introduction of certain policy changes that are without doubt far reaching. Firstly, in the latter part of 1978 the 75 percent credit guarantee of the Central Bank was withdrawn. Loans disbursed are now the full responsibility of the lender, and banks are free to apply the normal commercial banking criteria of credit worthiness, when considering loan applications of farmers. Secondly, there have been changes in the statutes of cooperatives to ensure that legal action can be taken against defaulters. Thirdly, it is no longer necessary for the People's Bank to channel loans via cooperatives and it's rural bank network, instead loans may be given direct to farmers.

As yet, it is too early to assess in detail the impact of these changes. The analysis in the following chapters of credit transactions in the Kirindi Oya Project area will in this respect be revealing. Islandwide there has been a significant contraction in loans granted under the comprehensive rural credit scheme. The total amount of loans provided under the scheme for paddy production in the cultivation year 1978/79 was Rs. 59.9 million. This was the lowest amount granted since *maha* 1973/74. A similar level of credit was disbursed for paddy production in *maha* 1979/80. Although the percentage of paddy loans recovered in 1978/79 rose to 75 percent, the repayment level declined to 67 percent for 1979/80. Thus, despite stricter criteria adopted by banks, there has not been substantial improvement in the recovery of loans. Although the discontinuation of the Central Bank guarantee was expected to encourage commercial banks to develop their capability to supervise and recover loans, these figures indicate that the banks have not yet been able to gear themselves fully to the new requirements regarding rural lending and the need for speeding up recoveries.

Three interlinked weaknesses can be identified from the preceding analysis. These are; the basis of fixing responsibility for repayment; the method of recovering unrepaid loans; and the interface between

politics, agricultural policy, and loan disbursement. We will examine these in order.

Firstly, when the principle of corporate responsibility was applied the rate of default was low. However, throughout most of the history of institutional credit the responsibility of repaying loans has been an individual one. The incentives for individuals to repay loans have been, (a) that the borrower cannot obtain more financing if he fails to repay his current loan, and (b) that the borrower will feel morally obligated to repay the loan. Yet, both of these incentives have been undermined by the practice of waiving debts and extending credit to defaulters. In addition, with the 75 percent guarantee, the lending institutions themselves were given little motivation to recover loans. The commercial banks bore only 25 percent of the losses due to default and the cooperatives which were the crucial link between the bank and the farmer did not suffer any loss at all.

Secondly, there has been little success in developing a method of recovering unrepaid loans. Until recently there existed inadequate legal backing to enforce recoveries and most defaulters have been well aware of this weakness. Unfortunately, the attempt to link marketing and credit which has generally contributed to high repayment levels in other credit schemes, has been difficult to implement in Sri Lanka.[1] Linking credit to marketing is generally most successful where the credit agency is the only market outlet. These conditions are most likely to be applicable to export crops with no local market or crops requiring industrial processing, rather than to subsistence crops such as paddy for which there exist an on farm consumption demand and numerous marketing outlets.

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1 Successful schemes in which marketing and credit have been combined are recorded by Jaodha(1974) for India and Von Pischke (1972) for Kenya.

Lastly, the interface between politics, agricultural policy and loan disbursement has probably led to credit being extended to farmers, who under normal banking criteria would not have been considered credit-worthy, since they did not have the production capacity to meet their cost and expenses as well as their dues on the loan. Further, the relaxed lending criteria and the waiving of past dues that frequently accompanied the introduction of a new credit scheme, hardly fostered a suitable climate for developing constructive attitudes towards repayment amongst borrowers. The foundation of a credit scheme is the personal good faith of the borrower who should be willing to use the loan for the intended purposes and to repay it both in full and on time.

2.2 FINDINGS OF SURVEYS ON DEFAULT

There are only a few studies that provide data on the reasons for nonrepayment of loans collected from the borrower himself. The most comprehensive study was carried out by the Central Bank for the period 1967-1970. Two later and less extensive surveys have been undertaken by the People's Bank, one covering the whole of the island and the other Vavuniya district only. In each study the reasons given for default by farmers have been classified slightly differently. However, in considering these findings here, reasons given for default will be examined within the conceptual framework for analysing defaults developed by Sanderatne (1978). Though the factors accounting for the nonrepayment of loans are numerous and in practice interrelated, Sanderatne has identified five categories of reasons which provide a useful framework in which to view the issue. These are as follows:

i) inadequacies in the agrarian structure
ii) variability in income due to poor weather conditions and other natural causes beyond the control of the borrower (i.e. seasonal factors)
iii) borrowers attitude favouring nonrepayment
iv) deficiencies in the institution disbursing credit
v) misallocation of loaned funds

The findings of the above mentioned surveys of default have been catogorised according to this framework in Table 2.2 and are discussed below.

2.2.1 Inadequacies in the agrarian structure

Inadequacies in the agrarian structure relate to conditions of the farmer's enterprise in which credit does not increase the productivity of the farm appreciably, thus limiting repayment capacity. This situation has been defined as when the amount of loan exceeds the farmer's cash savings, which is the excess of farm income over family subsistence expenditure (Sanderatne 1978). Aspects of tenure such as size of holdings, rental arrangements, and irrigation facilities are among the important factors bearing on the revenue productivity of the land holding, and determine whether the farmer's income is adequate to meet his basic living expenses and repay the loan taken.

In addition to the quality and quantity of the farm household's land resources, the opportunity to use credit productively may be constrained by the absence of technological improvements that are, (1) profitable under the conditions a farmer faces, (2) free of risks that he finds unacceptable, and (3) made available to him with information supplied by extension agents combined with adequate supplies of inputs. With regards to this situation, Donald (1976) remarked that "if a small farmer credit programme induces a farmer to take out a loan but gives him no way to add to his income to pay back the principal and interest - then the programme has only succeeded in getting a poor man into debt."

The survey conducted by the Central Bank for 1967 - 1970 period indicated that nonrepayment of loans by 19 percent of defaulters could be attributed to inadequacies in the agrarian structure. The survey revealed a high correlation between low income and defaults; defaulters moreover had a much lower average yield.[1] The main deficiencies identified were small size of holdings, lack of irrigation facilities and lack of advisory and

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1 The average yield of paddy of defaulters was 1.9 metric tons per hectare against a national average of 2.7 metric tons per hectare for the *maha* season in 1970/71.

Table 2.2

Categories of reasons for default 1967-70*

	Percentage of defaulters	Percentage of amount
Inadequacies in the agrarian structure	19	17
Seasonal factors	26	33
Deficiencies in the institution disbursing credit	17	12
Attitudinal factors	16	18
Misallocation of loaned funds	15	15
Miscellaneous	7	5

Source : Central Bank of Ceylon (1972), islandwide survey of 841 defaulters.

Categories of reasons for default 1977

	No.	Percentage of defaulters
Seasonal factors	148	65.78
Deficiencies in the institution disbursing credit	16	7.11
Attitudinal factors	13	5.77
Misallocation of loaned funds	33	14.67
Miscellaneous	15	6.67
	225	

Source : Research Department, People's Bank, 1977.

Categories of reasons for default *maha* 1977/78:Vavuniya district

	No.	Percentage of defaulters
Inadequacies in the agrarian structure**	54	23.4
Seasonal factors	120	51.9
Deficiencies in the institution disbursing credit	18	7.8
Misallocation of loaned funds	27	11.7
Miscellaneous	12	5.2
	231	

Source : Repayment of cultivation loans *maha* 1977/78:Vavuniya district, T.B. Karunaratne.

* The original classification of these findings into 17 cases of default is given in Table Appendix 1.

** Those farmers who gave family consumption as a reason for default have been placed in this category.

extension services to show farmers how best to utilise purchased inputs.

Although the Vavuniya survey of the People's Bank used "family consumption expenditure" as one category of default, neither of the People's Bank studies specifically used 'inadequacies in the agrarian structure' as a reason for default. It is difficult therefore to assess the percentage of loans outstanding for this reason. There is some evidence from the Vavuniya survey to suggest that when credit expansion is associated with a more liberal lending policy, defaults attributable to shortcomings in the agrarian structure are likely to be higher. This is because, as the volume of credit expands smaller and poorer borrowers are drawn into the scheme. Lower income farmer groups tend to be less aware of what type of inputs credit is best used for and how to apply inputs. Further since the quality and quantity of their land resources maintain them at a low level of subsistence, there is a greater likelihood of a loan in cash being diverted to consumption expenditure.

2.2.2 Variability in income due to factors beyond the farmer's control

The farmers in this category may not be able to repay their loans in a particular season owing to a shortfall in income resulting from a total or partial crop failures, destruction of crops after harvesting or an unexpected fall in prices. This situation may arise only in some seasons. In normal seasons the farmers in this category are willing and able to repay cultivation loans.

In all three surveys crop failure was identified as the most important single cause of default. However, according to the Central Bank survey, the actual percentage of default due to crop failure was very much less than the percentage reported by the

farmers.[1] Although crop failure could have been more extensive during the season for which the People's Bank surveys were conducted, the high percentage of defaulters (65 percent) attributing nonrepayment to crop failure may also be exaggerations of the situation. Possibly the farmers were biased towards attributing nonrepayment to factors beyond their control. Alternatively, 'crop failure' could have simply been convenient reason to give to officials. The fact that few defaulters in this category attempt to repay even part of cultivation loan suggests that nonrepayment is also closely related to attitudes.

2.2.3 Borrowers attitudes favouring nonrepayment

In this category the borrowers have sufficient income to repay their loans but choose not to repay them. The consideration of institutional loans as government grants is one factor creating this attitude. This reason is also closely related to such factors as the practice of waiving loans and the lack of effective sanctions against defaulters. These encourage farmers to postpone repayment in the hope that loans will eventually be written off.

Although borrowers are generally reluctant to admit that they had no intention of repaying the loan, 16 percent of farmers considered in the Central Bank study admitted to defaulting as they did not feel responsibility to do so. The islandwide survey of the People's Bank in 1977 indicated that six percent of defaulters considered loans as government aid and did not intend to repay them. Farmers' attitudes were not classified as a reason for default in the Vavuniya survey. However, although no respondents openly declared that they would not repay loans, the report notes that farmers references to discussions and decisions by informal groups regarding loans and repayments indicated their

1 A total sum of Rs. 58.6 million was defaulted by all farmers throughout the island over this period. The crop failure extension granted to these farmers amounted to Rs. 5.7 million approximately which is 10 percent of the amount defaulted. On the other hand, defaulters exaggerated this by declaring that 33 percent of loans in default were due to crop failure.

real intensions. The survey attributes this attitude to past experiences that borrowers have had of loans being written off by the government. It was also felt that in *maha* 1977/78 misunderstandings had occurred with some farmers accepting loans as grants.

2.2.4 Deficiencies in the institution disbursing credit

The poor organisation and inefficiency of institutions disbursing credit may often be the causes of poor loan collection performance. Under these conditions, even though farmers are able to repay the loans and have not suffered seasonal setbacks they tend to refrain from repaying. This is due to the credit organisation neither providing any credit supervision nor taking follow up action to recover the loan.

The survey of the Central Bank is replete with observations on the apathy of cooperative officials, slackness in record keeping, and the poor supervision of loans. Seventeen percent of defaulters attributed nonrepayment to deficiencies in the credit organisations. The default survey in Vavuniya mentions malpractices in the disbursement of credit and identifies a high degree of default by persons, themselves belonging to the lending institutions. A specific problem indicated by defaulters was inadequacies in the paddy purchasing scheme, which prevented them from selling paddy to the cooperatives.

2.2.5 Misallocation of credit

Misallocation here means, the use of funds for purposes other than for which the loan was intended. Funds may have been used partly for consumption purposes, repaying outstanding debts to private money lenders,[1] ceremonies or alternative investments. Since all the funds are not used to adopt improved farming

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1 In some instances this is due to delays in releasing the loans by the banks, which necessitates farmers borrowing from private sources to commence cultivation.

practices there is likely to be little increase in farmers' yields and their resultant income. The net result is that farmers have insufficient surplus from their paddy crops to repay the loan and fall into delinquency. According to all three default surveys, between 12 and 15 percent of defaulters were unable to repay loans due to the misallocation of funds.

2.3 DISCUSSION AND CONCLUSION

In addition to the general weaknesses of credit schemes described earlier in this chapter, two fundamental problems that will have to be addressed if loan recovery rates are to be improved, can be identified from the above examination of surveys on default.

Firstly, crop failure has been identified by farmers as one of the most important factors bearing on loan repayment. However, the cause of this situation remain inadequately identified. For instance, to what extent is crop failure genuinely the outcome of vagaries in water supply and climatic factors beyond the control of the borrowers as compared to poor farming practices? The prevalence of a large range of yields per hectare among farmers working plots in close proximity, suggests that climatic factors may have been over emphasised. Variations in farm management are likely to be more significant factors affecting yields. Therefore, some crop failure could be prevented through better farming practices and the appropriate use of fertiliser and pesticides.

Generally it is accepted that most farmers in Sri Lanka do not have the complete technical know-how that is required in the cultivation of the new varieties of paddy. The agricultural extension service is stretched too thin and does not give adequate coverage to all farmers. This is especially so in the project area according to a forthcoming study. There is little doubt that the productivity of credit will increase if adequate extension effort is devoted to the borrowing farmers. This points to the necessity for the credit institutions to take an active interest in the matter. They should take positive steps to ensure that their borrowers are given sufficient technical assistance and supervision by agricultural extension personnel.

Secondly, in locations or among groups of farmers where the agrarian structure and subsistence level of farming is likely to act as a constraint to achieving an acceptable level of loan repayment, the question arises as to whether institutional credit in its persent form should continue. This question poses a very real dilemma for credit strategies. On the one hand, if credit is restricted to only those who can repay the percentage of credit recovered will be high, but such loans will probably go primarily to those farmers for whom it may not be essential. If credit was withdrawn this would have little effect on their agricultural production since through a reallocation of their financial resources they could finance cultivation out of their own savings. In addition, the low interest terms of the loan might permit some farmers unfairly to accumulate wealth by releasing their own funds on usury. On the other hand, the equitability of an expanded credit programme in which a larger percentage of farmers including smaller and lower income farmer groups are extended credit - is frequently offset by a lower level of repayment, as demonstrated quite clearly in Sri Lanka's experience. One potential solution to this dilemma might be to consider different types and levels of credit for different groups of farmers. Currently all paddy farmers are served by a uniform loan scheme under the comprehensive rural credit programme.

In conclusion, from the preceding review of various credit schemes that have been implemented in Sri Lanka and the examination of the findings of surveys on default, it is evident that the loan repayment problem has become a serious issue threatening the future development and expansion of institutional credit. A solution to the problem will require initiatives at both the farm level and from within the lending institutions themselves. The analysis in this chapter suggests three essential components to be included in any programme formulated to tackle this problem. These are: (1) reforms that strengthen the efficiency and loan recovery mechanisms of the lending agencies, (2) adequate measures to cope with crop failure, and (3) programmes that address the factors constraining the productive use of credit at the farm level - particularly for the smaller and lower income farmers. In the following chapters, an examination of agricultural credit problems in greater detail will exemplify the issues highlighted in the general review of the problem presented in this chapter.

Chapter Three

ANALYSIS OF CREDIT TRANSACTIONS

In this chapter, data provided by the Bank of Ceylon and People's Bank are examined to study the agricultural credit transactions and the changing nature of lending activity in the Kirindi Oya Project area. The time period covered is the last eight years from 1973 to 1980. Two aspects are considered;the disbursement of cultivation loans under the paddy loan scheme and the level of recovery of these same loans. An introductory comment on the lending institutions in the project area and changes that have taken place since the commencement of the Comprehensive Rural Credit Scheme in 1973 provides the background to this analysis.

3.1 LENDING INSTITUTIONS IN THE PROJECT AREA

Until recently,the institutions directly involved with the administration of cultivation loans under the Comprehensive Rural Credit Scheme were located in the surrounding farming area outside Tissamaharama. Institutional credit for agricultural production was granted either through the two branches of the Bank of Ceylon located at the Agrarian Service Centres of Weerawila and Yodakandiya, or by one of the rural banks through which the People's Bank channelled funds for cultivation loans and over which it exercised a supervisory role. Hence, it was customary for the Bank of Ceylon to lend direct to the farmer without any intermediary organisation, whilst the People's Bank used the Cooperative societies and its rural bank network in administering credit.

Table 3.1 - The percentage share of paddy loans granted under the Comprehensive Rural Credit Scheme by the bank branches at Tissamaharama

	Total amount in Rupees	Bank of Ceylon percentage share	People's Bank percentage share
Yala 1973	23,351	-	100
Maha 1973/74	1,357,896	-	100
Yala 1974	874,177	-	100
Maha 1974/75	2,719,618	-	100
Yala 1975	715,070	74.32	25.68
Maha 1975/76	947,598	78.17	21.83
Yala 1976	482,293	62.90	37.10
Maha 1976/77	521,904	59.98	40.02
Yala 1977	852,312	87.87	12.13
Maha 1977/78	4,026,235	74.02	25.98
Yala 1978	664,220	84.18	15.82
Maha 1978/79	466,319	79.52	20.48
Yala 1979	165,566	55.17	44.83
Maha 1979/80	580,651	77.36	22.64
Yala 1980	260,180	64.17	35.83

Source : Bank of Ceylon and People's Bank branches at Tissamaharama.

Mention should be made of the relative importance of the two lending institutions in the Project area. A comparison of their activities is shown in Table 3.1 In terms of both the number of borrowers and the amount of credit granted, the Bank of Ceylon has been the dominant lender in the project area since opening it's branches in 1975. This dominance is probably related to the location of it's offices at the two Agrarian Service Centres where farmers could also purchase their production inputs. The immediate cause for the dominance of Bank of Ceylon may be the fact that borrowers were dissatisfied with the disbursement of cultivation loans through cooperative societies and rural banks.

However, over the last three years changes have taken place in the administration of cultivation loans, which have subsequently led to a reduction in the number of lending institutions. These changes have brought about a spatial concentration of these institutions in Tissamaharama town and both banks adopting a programme of lending direct to the farmer. On the grounds of profitability the Bank of Ceylon closed its branches at Yodakandiya and Weerawila in August 1979 and transferred its business to a newly opened branch in Tissamaharama. Since *maha* 1978/79 the People's Bank has ceased to channel loans through rural banks and has concentrated instead on lending direct to farmers through its branch located in Tissamaharama.

Today the only institutional lending agencies granting credit in the Project area are therefore one branch each of the People's Bank and the Bank of Ceylon, located in Tissamaharama town. Additionally, a small number of farmers from Badagiriya and Weerawila obtain loans from the People's Bank branch at Hambantota. This concentration of lending facilities in the towns can be interpreted as part of the process of restricting credit disbursement by the commercial bank in response to the withdrawal of the 75 percent Credit Guarantee by the Central Bank in the latter part of 1978. With the withdrawal of the guarantee, banks were asked to lend on their own terms and are now fully responsible for any losses they sustain through nonrepayment of cultivation loans.

These changes are relevant to an understanding of loan statistics presented in this and the following chapter. They also have a direct bearing on the organisational problems of serving the credit needs of farmers in the area when the Kirindi Oya Project is implemented. The appraisal report envisages that at full development 70 percent of the

total number of farm families will require credit.[1] Satisfaction of a demand of this magnitude would require the presence of banking facilities significantly in excess of what is presently available. This aspect will be discussed in greater detail in Chapter Seven.

3.2 DISBURSEMENT OF PADDY CULTIVATION LOANS 1973-1980

Details of lending by both the People's Bank and the Bank of Ceylon are aggregated in Table 3.2 to give an overall picture of the transactions of cultivation loans in the project area. The data do not cover the complete area since cultivation loans granted by the People's Bank branch at Hambantota cannot be included.[2] Despite this omission, the available data are sufficient to adequately characterise the main direction and magnitude of change as regards the disbursement and recovery of loans.

3.2.1 Interpreting loan statistics

Changes over time in the disbursement of loans for paddy cultivation are frequently studied in terms of the amounts disbursed. For example, the annual review of the national economy by the Central Bank considers credit in terms of the increase or decrease over the previous season in the total amount of cultivation credit granted. Whilst this measure may be sufficient to evaluate a credit programme from the banking point of view it is an inadequate and misleading measure by which to assess coverage in terms of farmers or acreage by a loan scheme over time.

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1 The total number of farm families will include 8320 families to be settled plus the estimated 4,446 families in the Project area already. Seventy percent of this 12,766 will amount to 8936 which is a staggering increase on the number of borrowers at present.

2 It was not possible to separate the Kirindi Oya farmers from the borrowers in the rest of Hambantota district during the entire period studied.

Table 3.2 - Paddy loans granted under the Comprehensive Rural Credit Scheme by the Bank of Ceylon and People's Bank branches at Tissamaharama (as at 31.12.80) (Rupees)

	No.	Amount	Balance	Percentage default
Yala 1973	na	23,351	2,381	10.19
Maha 1973/74	1379	1,357,896	297,405	21.9
Yala 1974	683	874,177	126,480	14
Maha 1974/75	1114	2,719,618	1,383,316	50.86
Yala 1975	287	715,070	166,356	23.26
Maha 1975/76	365	947,598	245,685	25.9
Yala 1976	213	482,293	193,355	40.09
Maha 1976/77	470	521,904	260,173	49.8
Yala 1977	367	852,312	670,610	78.7
Maha 1977/78	1717	4,026,235	2,481,872	61.6
Yala 1978	227	664,220	241,930	36.4
Maha 1978/79*	169	466,319	81,076	17.4
Yala 1979	52	165,566	19,335	11.7
Maha 1979/80*	155	580,651	172,070	29.6
Yala 1980	55	260,180	61,930	23.8

Source : Bank of Ceylon and People's Bank Tissamaharama.

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* See Footnote 1, Chapter 1.

Throughout the island the scales of finance per hectare for paddy cultivation under the comprehensive rural credit scheme have been adjusted from time to time to accommodate changes in the cost of agricultural inputs. For instance, the scale of finance for broadcast cultivation of new high yielding varieties under irrigation (the predominant method of cultivation in the project

area) has almost tripled over the last three years. It was Rs. 914/- per hectare in *maha* 1973/74, Rs. 2,000/- per hectare in *maha* 1977/78, Rs. 2,964/- per hectare in *maha* 1979/80, and Rs. 2,470 per hectare in *maha* 1980/81. Therefore, if the number of borrowers and the extent borrowed for over the last seven years had remained constant, comparing the total amount of credit disbursed in *maha* 1980/81 with that of *maha* 1973/74 would suggest that the credit programme had expanded threefold. This is now however the case. Hence, in analysing loan statistics in Sri Lanka it is necessary to be aware of changes that have occurred in the scale of finance per hectare and care must be taken not to interpret as an expansion in credit what is merely an upward revision in the scale of finance.

The best way to obtain an accurate picture of changes over time in the coverage of institutional credit would be to look at changes in the extent of paddy financed under the scheme. However, since this data is not readily available from lending institutions, change in the number of borrowings (i.e. the number of loans granted) will be used instead as a measure of change in the coverage of credit.[1]

3.2.2 Seasonal differences in the disbursement of paddy cultivation loans

There is a very marked difference in the number of loans granted in the *maha* seasons and the *yala* seasons. This is clearly indicated in Fig. 3.1. In most years the number of cultivation loans granted in the *maha* season exceeded the number granted in the

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1 The number of borrowings is a reasonable proxy for area provided it is acceptable to assume that there has been little change over time in the distribution of paddy hectare amongst borrowers. This is reasonable for a time span of seven years.

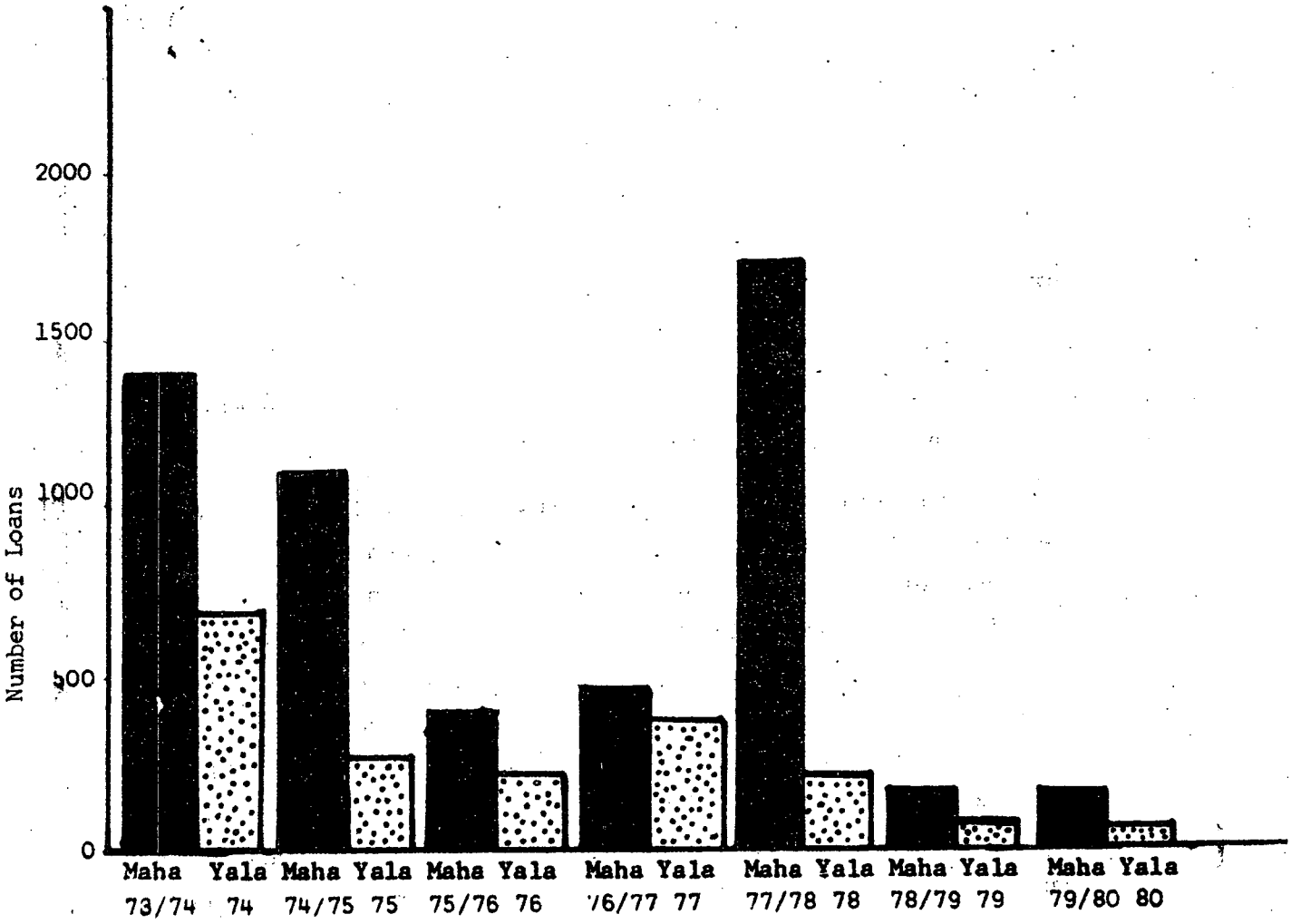

Fig. 3.1

NUMBER OF PADDY CULTIVATION LOANS GRANTED

BY LENDING AGENCIES IN TISSAMAHARAMA

1973 - 1980

yala season, sometimes by as much as 700 percent. (For example compare *maha* 1977/78 and *yala* 1978 in Table 3.2). Three factors contribute to these seasonal differences.

Firstly, not all farmers can cultivate during the *yala* season due to insufficient irrigation water and inadequate rainfall. Therefore, the number of potential borrowers is necessarily lower in this season. Secondly, some farmers after a good *maha* season can self-finance their *yala* cultivation and do not require credit. However, since low interest rates may encourage eligible farmers to continue borrowing even when they do not require credit, the number of farmers foregoing credit on account of this reason is probably quite small. Thirdly, there are those farmers ineligible for cultivation loans in *yala* as a result of nonrepayment of their previous *maha* loan. Some of them manage to make good their loan before the next *maha* season and therefore are eligible for credit in *maha*.

3.2.3 Annual changes in the disbursement of paddy cultivation loans

The general picture of agricultural credit in the project area is one of a decline in both the number of loans granted and the amount of credit disbursed over the last seven years. Comparing the situation in 1980 with that of 1974 the number of loans granted in the *maha* season has dropped by over 800 percent and that in *yala* by 1200 percent. This progressive decline was interrupted in 1978 when the number of loans granted peaked due to the liberal credit policy of the incoming government which granted loans even to defaulters. However, only a small percentage of the loans granted in *maha* 1977/78 were repaid and now a large number of borrowers are ineligible for credit from institutional sources. Therefore the provision of agricultural credit in the project area is currently at a very low level.

The changes that have occurred in the area of paddy cultivated using institutional finance can be estimated. Assuming that farmers borrowed the maximum amount allowed per hectare, estimates of the hectarage respectively.[1] The contrast between *maha* 1979/80 and the two earlier seasons is great and one must conclude that the extent of paddy financed by institutional credit has declined considerably. In a *maha* season the estimated average paddy hectarage in the project area is 4523 according to the appraisal report. Hence, it is doubtful whether much more than five percent of irrigated paddy in the project area is covered by the institutional credit scheme.

The factors accounting for year to year fluctuations in the number of paddy cultivation loans granted can be divided into two groups. Those resulting from action on the part of the borrowers and those originating due to the activities of the institutions.

Since one of the lending criteria of the banks is that the borrower should not be in default on previous loans, the number of potential borrowers declines as farmers become ineligible for loans through default. As shown in Table 3.2 the decline in the number of loans granted is paralleled by a deteriorating situation as regards the level of loan repayments. In addition to farmers dropping out of the scheme through defaults some farmers may stop taking loans for other reasons. For instance, as short-term seasonal loans are not usually considered to be necessary indefinitely, one logical possibility is that over time some farmers become self-financing and no longer require credit. However there is little evidence that much of the decline in number of loans granted in Tissamaharama is related to farmers becoming self-financing

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1 The figure for *maha* 1979/80 may be a slight underestimate since when credit transactions over the last four seasons are studied in greater detail they show that many farmers were not taking the full loan per hectare (Chapter 4). In estimating these hectarages the scales of finance for irrigated broadcast paddy rather than transplanted paddy have been taken.

as a result of the credit scheme. Information collected in the field survey discussed in Chapter five suggests that of the small number of nondefaulters who have stopped taking institutional credit, some did not require credit and others preferred to borrow noninstitutional sources.

It is less easy to identify specific factors on the lenders' side which have influenced the number of loans granted each year. With the exception of *maha* 1977/78, the banks' lending criteria have changed little over time. However, the effect of relaxing the banks' lending criteria on the number of loans granted in *maha* 1977/78 is a clearly identifiable one. The number of loans granted during this season was three and half times greater than the number granted in *maha* 1976/77. However such an expansion of credit was not accompanied by an efficient loan recovery system. This coupled with a feeling on the part of the borrowers that loans in this season might also be written off, may have contributed to the very poor recovery rate. This left a smaller number of farmers eligible for credit in the subsequent seasons. There is little doubt that the fall in the number of loans granted in recent seasons is related to the banks taking greater care in establishing the credit worthiness of the borrower now that loans are no longer guaranteed. The switch to direct lending by the People's Bank rather than through rural banks is also a similarly inspired phenomenon. This has changed the accessibility of the banks to the farmers especially those in remote areas, which may influence the number of borrowers in the future.

3.3 INCIDENCE OF DEFAULT ON PADDY CULTIVATION LOANS; 1973-1980

Bank statistics show default rates in terms of the number of loans in default. Since cultivation credit is short-term and granted on a seasonal basis over a clearly defined time period, defining default is relatively straightforward. The balance of loans outstanding at the end of the season is expressed as a percentage of credit granted in that season and this is taken as the default rate. Table 3.3 shows the calculated default rates for each cultivation season.

Over time the general trend, has been one of quite good repayment in the earlier seasons followed by a gradually increasing rate of default. This has only recently been brought under control. In the first three seasons between 78 percent and 89 percent of loans contracted have been repaid. The situation gradually deteriorated in the following seasons until in *yala* 1977 and *maha* 1977/78 only 22.3 percent and 38.4 percent respectively of loans granted have been recovered. After *maha* 1977/78 a greater percentage of loans were recovered.

The general trend described above still holds when default rates for the branches of the Bank of Ceylon and People's Bank are considered individually. The Bank of Ceylon first began granting cultivation loans in the project area in 1975 and has always experienced mediocre recovery rates, the highest being 79 percent. It is noticeable that lower default rates were at the beginning of this period. But, within three years of operation the percentage of loans recovered declined drastically so that for *yala* 1977 as much as 81.2 percent of all loans granted had not been recovered. The People's Bank fared little better. By the time the Bank of Ceylon entered the scheme, the People's Bank was already beginning to experience difficulties in recovering loans granted to farmers via rural banks. The People's Bank experienced its lowest level of recovery of loans granted in *maha* 1977/78. This coincided with an expansion of credit disbursement. However, since *maha* 1978/79 when the bank began lending direct to farmers, recovery of loans has been much improved and almost 100 percent has been recovered in three out of the last four seasons. These high repayment levels have been achieved by lending to a small group of borrowers only. This does seem to suggest that lending direct has given the People's Bank a greater control over whom it lends to.

Table 3.3 - Percentage default, Bank of Ceylon and People's Bank, Tissamaharama (as at 31.12.80

	Bank of Ceylon	People's Bank	Percentage of total loans defaulted
Yala 1973	-	10.2	10.2
Maha 1973/74	-	21.9	21.9
Yala 1974	-	14.0	14.0
Maha 1974/75	-	50.9	50.9
Yala 1975	21.6	28.0	23.3
Maha 1975/76	25.9	26.0	25.9
Yala 1976	27.2	61.9	40.1
Maha 1976/77	38.8	66.2	49.8
Yala 1977	81.2	60.3	78.7
Maha 1977/78	58.7	70.0	61.6
Yala 1978	38.2	26.8	36.4
Maha 1978/79	20.8	4.2	17.4
Yala 1979	21.2	-	11.7
Maha 1979/80	33.5	22.7	29.6
Yala 1980	37.1	1.0	23.8

Source : Bank of Ceylon and People's Bank, Tissamaharama.

Some indication of the magnitude of the default problem in the project area is to be gained from considering the total number of farmers who are currently defaulters and therefore ineligible for subsequent cultivation loans. About 1,140 farmers defaulted on loans taken from either the Bank of Ceylon or the People's Bank at Tissamaharama between

maha 1977/78 and *yala* 1980 inclusive.[1] This figure underestimates the total number of defaulters in the project area since loans disbursed by the Hambantota branch of the People's Bank are excluded (see page 30). Even with this omission, it is evident from the above estimate that certainly not less than 25 percent of the farm households in the project area are defaulters and therefore not eligible for participation in the loan scheme. The question arises as to what extent this may act as a constraint to the future development of the area, and what action can be taken to reintegrate and attract these producers into the credit programme.

3.4 CAUSES OF DEFAULT

An understanding of the causes of default is essential if the rate of default is to be reduced. The data already presented in this chapter suggest that in seeking to understand the incidence of default it might be useful to consider more closely the relationship between the incidence of default and three key variables. These are bank lending policy, the number of borrowers, and the previous season's default rate.

Firstly, the close relationship between the default rate and lending policy has already been demonstrated with reference to the liberal credit policy of *maha* 1977/78 and to the effect of remedial action taken in the latter part of 1978 which subjected agricultural credit to the criteria of normal commercial bank lendings. It may be concluded that the expansion of credit without an efficient system of loan recovery or any enforceable form of security is likely to lead to an increase in the percentage of loans defaulted.

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1 *Maha* 1977/78 is taken as the base year, it was in this season that credit was liberalised and extended to defaulters. In the following seasons farmers have only been granted cultivation loans if they were nondefaulters. The number of defaulters in the project area is only an approximate figure since, it was difficult to identify the exact number of loans outstanding for *maha* 1977/78 and *yala* 1978 when a substantial proportion of loans had been disbursed through rural banks. The estimated number of defaulters in *maha* 1977/78 and *yala* 1978 has been obtained simply by multiplying the number of loans disbursed by the percentage amount in default. For *maha* 1978/79 and *yala* 1980 inclusive, details of the exact number of loans in default could be obtained from the banks.

Secondly, from an examination of Table 3.2, there appears to be some link between the number of loans granted and the default rate. After the first two seasons higher default rates generally occur when large numbers of loans are granted. In contrast, small numbers of loans granted in recent seasons are accompanied by lower default rates. There are at least two possible ways in which the number of borrowers can influence the default rate. One is through the inability of lending institutions to adequately process and supervise loans. When the number of borrowers expands suddenly without an efficient system for processing, supervising, and recovering loans the default rate is likely to increase. This argument seems possible for defaults in *maha* seasons but does not adequately account for those in *yala* where the number of loans granted is only a fraction of *maha* loans. Yet default rates have been high in some *yala* seasons.

The other way in which the number of borrowers may affect the default rate is through the composition of the borrower. A larger proportion of farmers in a group of new borrowers (as opposed to those already in the credit scheme), are likely to default on cultivation loans. This assumption is supported by the argument that those farmers in the credit scheme have already proved their credit worthiness over a number of seasons, whereas any additional group of borrowers contains farmers who have either defaulted in the past or are first time borrowers.[1] This reason seems a logical explanation for the increase in the default rate in *yala* 1977 and *maha* 1977/78. An extension of the argument would be that over successive seasons, as some borrowers are excluded from the scheme through default the repayment level of loans should increase, since the majority of loans granted go to farmers who do not default. The latter would account for the drop in the default rate in recent seasons. However, the evidence from earlier seasons is

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1 In investigating the causes of default in Vavuniya district Karunaratne (1979) found that in *maha* 1977/78 the bulk of loans had fallen into the hands of farmers who had never had such vast amounts earlier. They were used to living on meagre incomes at low levels of subsistence. Fifty percent of defaulters used traditional cultivation systems and traditional varieties of grain. Under such circumstances farmers did not utilise loans properly and the loan was wasted or used unproductively.

slightly contradictory. Although the number of borrowers declined, the default rate increased between 1973 and 1977. A consideration of the third relationship throws some light on this situation.

As well as considering the credit worthiness of the borrowers it is necessary to take into account past levels of default. Throughout the earlier seasons the default rate increased successively, suggesting a positive correlation with that in the previous season. A plausible explanation of this is the result an ineffective loan recovery system has on the attitude of the borrower. If borrowers are aware that no remedial action will be taken against defaulters, this tends to erode their own credit discipline. In successive seasons an increasing number of farmers default for no reason other than imitation.

The above discussion identifies three hypotheses. Firstly, that the default rate is related to the bank lending policy, secondly that the default rate is positively related to the number of loans granted and thirdly that the default rate is influenced by those of the previous seasons. The latter two hypotheses can be subjected to empirical verification using regression analysis.

In Appendix II the loan statistics given in Table 3.2 are used to construct various regression models to explain the incidence of default. The results of this exercise, suggest that in the *maha* seasons the default rate is related to the absolute number of loans granted and the change in the percentage default rate over the previous two seasons. Changes in these two variables were found to explain statistically 89 percent of the variation in default over the period 1973-1980. For *yala*, 75 percent of the variation in the incidence of default over the period 1973-1980, was statistically explained by the previous *maha* seasons default rate and the absolute change in the number of loans granted since the previous *yala* season.

These models are necessarily incomplete since they do not incorporate various human and climatic factors which can influence the default rate. Yet, they do seem to have succeeded in capturing the broad pattern of change in the incidence of default in the area since the introduction of the comprehensive rural credit scheme in 1973. By

lending support to the hypothesis that the default rate is influenced by the previous seasons' default rate and the change in the number of borrowers since the previous season, these models usefully indicate two factors that the default rate has been sensitive to in the past.

Chapter Four

PADDY CULTIVATION LOANS:MAHA 1978/79-YALA 1980

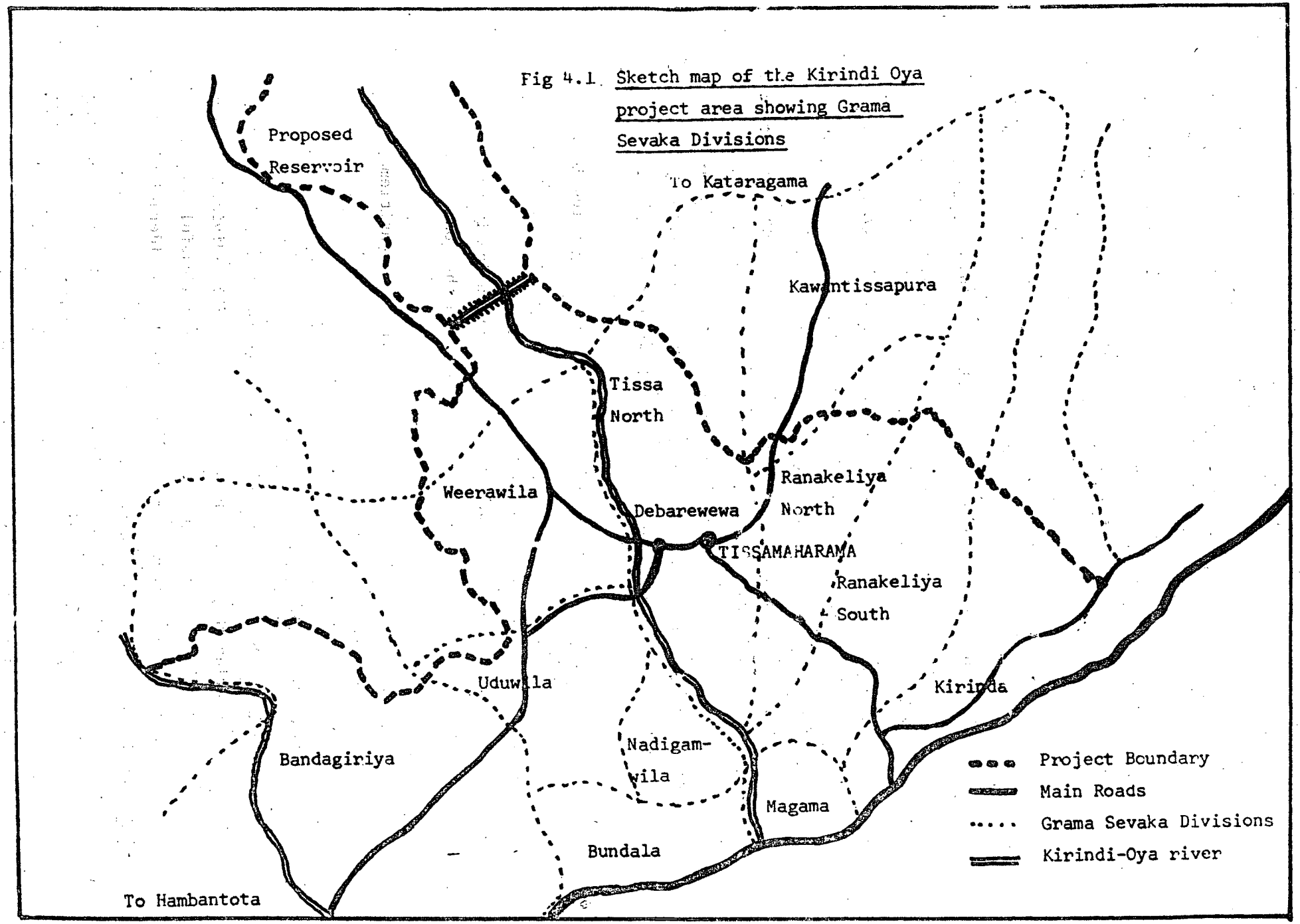
Credit transactions over the four seasons (*maha* 1978/79, *yala* 1979, *maha* 1979/80, and *yala* 1980) are examined in this chapter. Details of each paddy cultivation loan made to every farmer in the Kirindi Oya Project area were obtained from the bank ledgers and the loan applications available at the respective banks. Thus, a full record of all institutional credit granted in the area could be compiled. This is summarised in Table 1 of Appendix 1. The information is best considered under the following aspects:

- the relative importance of different lending agencies in different parts of the project area.
- spatial variation in the default rate.
- a comparison of the paddy farm size distribution in the area with that of farmers participating in the loan scheme.
- examination of the difference between the loan entitlement and the actual amount used.

4.1 DIFFERENCES IN AGENCIES AND AREAS

The map of the project area(Fig4.1)depicts the *Grama Sevaka* divisions covering the area. These are administrative divisions, each with several villages. They provide the basis for a useful disaggregation of the study area to facilitate the consideration of the lending activities of the banks.

Fig 4.1 Sketch map of the Kirindi Oya project area showing Grama Sevaka Divisions



The People's Bank branch at Hambantota is the main lender in Weerawila and Badagiriya, with only a few loans in these areas being granted by other banks. Over the last four seasons, there has been a decline in the lending activities in these parts as indicated by the number of loans granted to farmers. In *maha* 1978/79 and *yala* 1979, the total number of loans granted in Weerawila and Badagiriya were 80 and 20 respectively, whereas in *maha* 1979/80 and *yala* 1980, the corresponding figures were 27 and 18.

The remaining *Grama Sevaka* divisions seem to fall into the spheres of influence of the two lending institutions in Tissamaharama. Since both banks are now located close to each other in Tissamaharama and are equally accessible to borrowers in physical terms, these spheres of influence probably relate to the location of earlier branches of the banks. The People's Bank is clearly the dominant lender in Uduwila and Nedigamwila. Over the period under review, this area received 80 percent of its loans from the branch at Tissamaharama. Further, fully two thirds of all loans granted by this same branch went to this region. The Bank of Ceylon has, on the other hand, only a small number of borrowers in Uduwila, but is the dominant lender in all other *Grama Sevaka* divisions.

Certain *Grama Sevaka* divisions do not feature prominently in the lending activities of either bank. Over the last four seasons no loans have been granted to farmers in Bundala or Kirinda and only a small number were granted to farmers in Kawantissapura and Magama. There are several reasons that are likely to contribute to this situation. In the study area, Bundala and Kirinda are the divisions most distant from the lending centres of Tissamaharama and Hambantota and are highly disadvantaged regarding transport facilities. These two divisions also exhibit the worst conditions in the project area in respect of the availability of agricultural land and water. Consequently, very little crop cultivation is practised in these areas. Kawantissapura, though closer to Tissamaharama, suffers from highly limited availability of land suitable for paddy cultivation and poor irrigation facilities. Magama, in spite of being better off in these respects, still experiences considerable difficulties in irrigation. Even though it is served by a major tank, cultivation is often undertaken only during the *maha* season. Hence, the absence of institutional borrowers in Bundala and Kirinda and the paucity of borrowers in Kawantissapura

and Magama may largely be attributed to poor accessibility and physical constraints to cultivation.

Table 4.1 presents aggregated data pertaining to the relative performance of these banks in the project area over the four seasons under consideration in this chapter. This shows that the Bank of Ceylon branch at Tissamaharama is the major lending institution in terms of the number of loans, amount of loans, and the area covered by those loans. However, this branch also has the highest default rate. The branch of the People's Bank at Tissamaharama though playing a secondary role, shows a very satisfactory recovery rate.

Table 4.1 - Lending performance of the Banks in Kirindi Oya Project area (*maha* 1978/79-*yala* 1980)

	Percentage number of loans granted	Percentage amountof loans granted	Percentage paddy hectarage financed by loans	Percentage amount granted in default
Bank of Ceylon (Tissamaharama)	50.7	56.5	54.4	28.2
People's Bank (Tissamaharama)	23.9	21.8	23.6	5.2
People's Bank (Hambantota)	25.4	21.7	22.0	17.1
	100. 0	100.0	100.0	

4.2 SPATIAL VARIATION IN THE DEFAULT RATE

The percentage of total loans in default in each *Grama Sevaka* division varies from season to season with no obvious pattern (Table 3 of Appendix 1. However, two points are worth noting. Firstly, the generally low level of default in Uduwila stands out. Here farmers appear to be successfully borrowing and repaying cultivation loans each season. The People's Bank branch at Tissamaharama is the dominant lender in Uduwila. This suggests that its low default rate is not only due to the Bank's lending directly to a small number of borrowers, but it is also associated with lending to farmers in a particular region of the project area. It is interesting to note that there is little difference between the number of loans granted in *yala* and *maha*

seasons in Uduwila as indicated in Table 4 of Appendix 1. This indicates that borrowers grow two irrigated paddy crops and are therefore, likely on average to be better off than farmers in other *grama sevaka* divisions where the water supply is less reliable.

Secondly, although there are only a few borrowers in Magama, the default rate is high and has increased in successive seasons despite a decline in the number of borrowers. This may partly be associated with the problem of supervising credit in a less accessible *grama sevaka* division and also to the fact that very often only a *maha* crop is obtained in this area. There is little else that can be noted about the level of default in other *grama sevaka* divisions except that the default rate in Ranakeliya North seems higher than average. The level of repayment throughout the remaining divisions is in general unsatisfactory.

4.3 AGRICULTURAL CREDIT AND PADDY FARM SIZE

For the Kirindi Oya Project as a whole (including the tank bed area), the paddy farm size distribution reflects a dominance of small farms. The average paddy holding is about one hectare with some 90 percent of the total number being below two hectares. Only about one percent of the total farms are greater than four hectares. It is revealing to make a comparison between the size distribution of paddy farms in the project area and that of farms amongst participation in the loan scheme (Table 5 of Appendix 1).

There is inter-seasonal variation in the distribution of borrowers among the different size categories of farms. However, the general pattern of distribution for each season remains much the same. The median farm size category of 0.81 to 2.00 hectare comprise 48 percent of all farms. The farmers from this category amount to between 60 and 72 percent of all borrowers. This indicates a good participation of medium size farmers in the loan scheme. Although farms over two hectares in size comprise only nine percent of all farms, 24 to 37 percent of borrowers came from this group. Consequently a disproportionately large participation by farmers operating large holdings is evident.

In constrast, whilst 34 percent of farm households in the project area are estimated to have holdings of less than .8 hectares no more than five percent of borrowers in any one season have fallen into this category. The poor participation of small farmers in the loan scheme is more striking when considered in numerical terms. Out of an estimated 1,900 farm households in the project area cultivating less than .8 hectares of paddy land, the highest number participating in the loan scheme in any one season has been twelve. These very small farmers borrowed in *maha* 1978/79, when the highest number of loans were disbursed. This may suggest that in a season when a larger number of loans are granted there are likely to be a higher percentage of small holders among the borrowers.[1] In both *yala* 1979 and *yala* 1980, virtually no borrowers had less than .8 hectares of paddy land.

The reasons for such a low participation of small farmers in the loan scheme can be many. This group may have difficulty regarding access to institutional credit if they cultivate unirrigated paddy. Over the period under consideration all the farmers in receipt of institutional cultivation loans cultivated irrigated paddy. Although officially loans are not restricted to this farmer group, it appears that banks in the project area have not been granting loans to farmers with rainfed paddy lands. Among those small farmers who do cultivate irrigated paddy low participation may be related to lack of knowledge about the scheme. Then again there may be difficulties in making loan applications on account of finding two guarantors. Some in this group are those farmers who have become ineligible for further credit due to default. It is also likely that the small size of these farms contribute to poor repayment capacity which deters farmers from obtaining loans.

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1 To test this hypothesis, it would be necessary to compare the distribution of borrowers according to the paddy holding size over a number of seasons when the number of loans granted have varied, unfortunately, loan application forms which give data for earlier seasons were not available.

4.4 LOAN ENTITLEMENT AND ACTUAL USE

Although there exist standard scales of finance per hectare for paddy cultivation loans, many farmers have been borrowing varying amounts below the maximum loan available. Table 6 of Appendix 1 gives out the standard scales of finance operatives in the project area over the last four seasons. If the mean loan per hectare per borrower given in Table 2 of Appendix 1 is compared with these scales it is evident that the mean borrowing is around Rs. 500-700 less than the maximum entitlement. Additionally, there are perceptible variations among borrowers according to the banks they use despite the standard scales being the same for each bank. With the exception of *yala* 1980 borrowers from the People's Bank branch at Tissamaharama have on average taken smaller loans per hectare than other farmers in the project area. This may be related to the fact that most of the lending of this branch was to farmers in Uduwila who may have had greater ability to self-finance parts of their cultivation expenses.

A frequency distribution of average loan per hectare per borrower has been constructed for each season and is shown in Fig. 4.2. The shapes of these distributions are roughly similar. They are all clearly asymmetric and skewed to the left (i.e. negatively skewed). This demonstrates that the numbers of farmers borrowing small amounts per hectare were low. The highest frequencies of borrowers were for sums considerably less than the maximum available except in *maha* 1979/80. Thus, although the categories close to the standard scales of finance have the highest frequencies of borrowers large majorities of farmers used loans well below the full amounts they were entitled to.

That borrowers took less credit than was available to them requires some explanation. Various plausible hypotheses are discussed below. They will be evaluated further in the light of field work in the following chapter.

Farmers may not be taking the full loan per hectare if the credit ceiling is in excess of their production costs. However, a paddy crop budget for Hambantota district drawn up by the World Bank, indicates that in *maha* 1978/79 and *maha* 1979/80 total cultivation

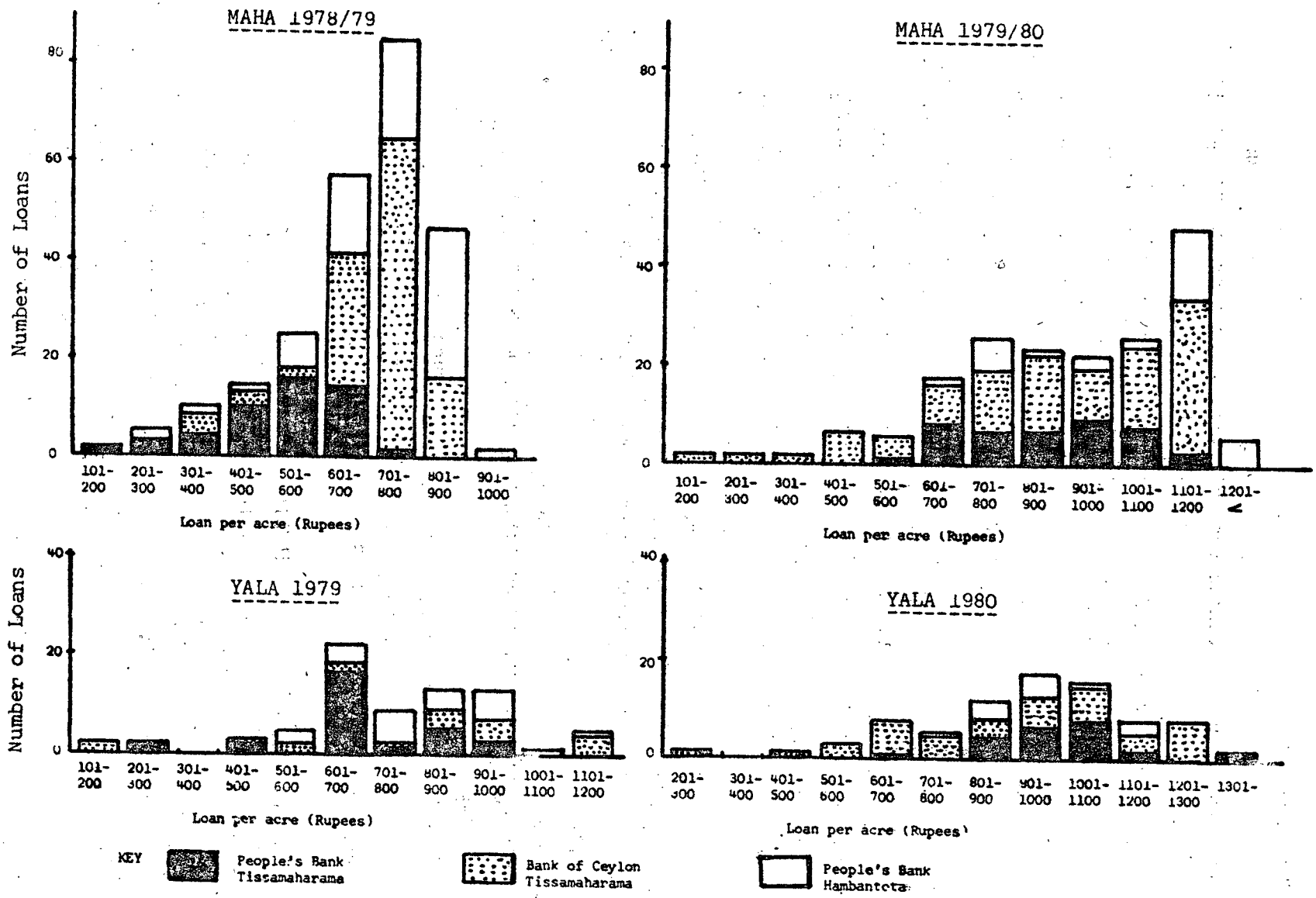

Fig. 4.2

FREQUENCY DISTRIBUTION OF LOAN PER ACRE PER BORROWER

costs were above the maximum loan amount available to farmers.[1] The opinions of bank staff and producers supported this finding.

A refinement of the above hypotheses would be that some components of the loan exceeded the actual costs incurred by the farmer and so it was not necessary for him to take the full amount of credit for that component. For instance, credit was available in kind for fertiliser, weedicides, and pesticides. It was not possible to take some of this allocation in cash for use in other cultivation activities. Use of these inputs below the amount provided on credit would have reduced the average loan per hectare, although the average total costs of production exceeded the total credit available. The credit ceiling per hectare for fertiliser and agrochemicals in the time period under consideration was around Rs. 1000. Bank managers indicated that not all farmers took the full allocation of these inputs. The paddy crop budget drawn up by the World Bank estimated that agrochemical costs per hectare in *maha* 1978/79 and *maha* 1979/80 were respectively Rs. 400 and Rs. 625. It appears therefore, that the credit allocated for these inputs was larger than what farmers used in those seasons.

Farmers indicated at informal discussions that a few of them did not take the full loan because they were not keen to collect the third loan instalment - the harvesting component. The reason given was that the interest on this component was charged from the date the first instalment of the loan was released on, and not from the date they actually took the harvesting component which was often four to five months later. Farmers felt that this was unjustified.[2]

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1 A paddy crop budget drawn up by the World Bank for Hambantota district estimates that total costs per hectare in *maha* 1978/79 and *maha* 1979/80 were Rs. 3120 and Rs. 3582 respectively, i.e. around Rs. 490 above the credit ceilings. Sri Lanka:key development issues in the 1980s. Report No. 2955-CE.

2 Those farmers not taking the harvesting component generally used their own resources or borrowed from noninstitutional sources to finance harvesting.

The fact that a large component of paddy loans in the project area went to larger than average farmers point to another reason why borrowers did not take the full loan per hectare. It is possible that they were able to finance some parts of cultivation themselves. This may account for borrowers from Uduwila taking smaller loans per hectare than other farmers. This points to yet another reason for this phenomenon of under-utilization of credit. Well-to-do farmers might have been borrowing only the cash components and relending them at higher interest rates.

In summary, the evidence gathered in this chapter has highlighted a number of important features about the disbursement of agricultural credit in the project area over the four seasons considered. The Bank of Ceylon is the major lending institution in the project area, but it also has the highest default rate. The People's Bank branch at Tissamaharama shows on the other hand, a very good recovery rate. However, since more then 70 percent of the credit disbursed by this bank is granted to farmers in Uduwila, it is possible that its lower default rate is a result of the better repayment capacity of farmers in that area. A comparison of the paddy farm size distribution in the project area with that of farmers participation in the loan scheme, drew attention to the paucity of small farmers participating and showed that institutional credit is predominantly made use of by farmers with the larger paddy holdings. Although the average cost of cultivating one hectare of paddy is probably higher than the credit ceiling specified under the loan scheme, it was noted that farmers have been borrowing varying amounts below the maximum loan available. Probably, this is mainly due either to farmers being able to finance some parts of cultivation themselves or because the components of the loan given in kind (i.e. for fertiliser, weedicide and pesticide) were higher than what the farmers actually used.

Chapter Five

FIELD SURVEY OF AGRICULTURAL CREDIT

Identification and understanding of the more important factors that contribute to the nonrepayment of paddy cultivation loans are important aspects of this study. The basis for this exercise is the responses of farmers to a field survey on agricultural credit conducted in the project area. Following a discussion of the sampling plan and data collection, the results of the survey are analysed in two parts. Firstly, the information provided by the survey is used to make a comparison among farmers who are defaulters, nondefaulters, and nonborrowers from institutional sources. Secondly, the reasons given for default by farmers themselves are examined in the light of the conceptual framework reviewed in chapter two. Additional evidence concerning factors bearing on loan default is provided by considering farmers' paddy yields, the extent to which defaulting loans are followed up by the lending agency, and the degree to which defaulting households have repaid in part their outstanding loans.

5.1 SAMPLING PLAN AND DATA COLLECTION

5.1.1 The sample

The sample was designed to cover 160 farm households and to include three categories of farmers. These are, nondefaulters defaulters, and nonborrowers.[1] It was planned that 50 percent

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1 For the purpose of this survey nonborrowers are farmers who have not taken institutional credit. Some of the farmers in this group have taken cultivation services, inputs, and cash on credit from private sources.

of the sample would be defaulters, while the remaining 50 percent would be equally made up of nondefaulters and nonborrowers. The latter two categories provided control groups against which the socio-economic characteristics and responses of defaulters could be compared. The inclusion of nondefaulters and nonborrowers in this survey makes this a significant departure from the earlier studies on default reviewed in chapter two. Nondefaulters were included because in addition to examining the reasons for non repayment of loans it is also necessary to understand why some farmers do repay cultivation loans. Inclusion of nonborrowers in the sample provides relevant information concerning farmers attitudes to institutional credit, use of alternative sources of credit, and self-financing potential.

5.1.2 sampling frame and sampling technique

The sample of defaulters and nondefaulters was selected from the population group who had contracted loans for paddy cultivation over the four seasons, *maha* 1978/79, *yala* 1979, *maha* 1979/80 and *yala* 1980. In drawing the sample, it was intended that each *Grama Sevaka* division should be represented in proportion to the total number of borrowers from that area. Therefore, defaulters and nondefaulters were stratified by *Grama Sevaka* divisions and a sample was selected systematically from their respective populations.

The sample includes about 60 percent of the total institutional borrowers who in the four seasons being examined, had paddy loans outstanding. The number of nondefaulters in the sample represented around 10 percent of the number of paddy loans that had been disbursed and satisfactorily recovered. However, since the latter remains eligible for loans in subsequent seasons, in reality, the percentage of nondefaulters from the project area included in the sample is higher than this figure suggests. The sampling frame covered four cultivation seasons so perhaps as many as 30 to 40 percent of nondefaulters are included. Thus, a high coverage of both nondefaulters and defaulters was obtained in the survey.

Initially, it was intended that the nonborrowers in the sample would be selected from encroachers in the project area. There is a good case for including encroachers in the sample since this sector of the farming community is generally excluded from institutional credit schemes. They would have provided useful information concerning farmers attitudes to production finance and farmers self-financing potential. Unfortunately, no sampling frame of encroachers was available. The sample of farmers not borrowing from institutional sources, was therefore selected using the preliminary findings of a baseline socio-economic survey conducted by ARTI in the project area. From the schedules of this survey a list of paddy farmers who had not taken institutional credit over the four seasons concerned was compiled for each *Grama Sevaka* division. From these lists 40 nonborrowers were systematically chosen to be included in the field survey.

5.1.3 The schedule (sample schedule is given in Appendix 3)

Although the principle objective of the survey was to elicit information relevant to the non repayment of cultivation loans, use was also made of the schedule for obtaining information on (a) savings and lending activities of farm households which are reviewed in Appendix four, and (b) the means by which farmers had financed the most recent cultivation season - *maha* 1980/81; discussed in chapter six. It was anticipated that the latter would provide a valuable insight into the use of institutional loans by borrowers and demonstrate how defaulting households financed cultivation when ineligible for institutional credit.

The schedule was made up of five sections which covered the subjects outlined below:

Section I - Land operated, tenure, water availability, crops harvested, credit needs, and source of borrowing.

Section II - All loans contracted from *yala* 1977 to *yala* 1980 inclusive, details of use of last institutional loan and reasons for nonrepayment (if applicable), farmers opinions on how banks should deal with defaulters, and improvements desirable in the loan scheme.

Section III - *Maha* 1980/81 finance details. Sources of credit broken down into four categories - cultivation services and inputs taken on credit from private sources, institutional credit, noninstitutional cash loans, pawning. Cost of production data.

Section IV - Medium term credit, informal and formal savings activities

Section V - Lending activities

Section VI - Wage employment and off-farm income

5.1.4 Field work

The survey was carried out during March 1981 with the assistance of field investigators from ARTI. The familiarity of the researchers with the project area and the helpful assistance of *Grama Sevaka* officers made it possible to contact a majority of farmers in the sample. However, a few farmers had to be dropped from the sample as they had either left the area or could not be traced. Also, when some farmers initially classified as defaulters were interviewed, it came to light that they had recently repaid their outstanding loans and no longer belonged to this category. They have consequently been included in the sample of nondefaulters. In total 149 farm households were interviewed. The distribution of the sample among defaulters, nondefaulters, and nonborrowers is 72, 46, and 31 respectively.

5.1.5 Nonsampling errors

Although a few farmers experienced difficulties in providing the required details for some questions overall, the level of response was good. It was possible for farmers to check details of past institutional loans against their bank passbooks and this assisted them in answering questions concerning

institutional loans. However, few farmers could recall the amount of the institutional loan they had taken for each cultivation activity and lapses of recall were observed in respect of noninstitutional loans taken prior to a year.

5.2 CHARACTERISTICS OF SAMPLE HOUSEHOLDS

The general information obtained from the survey concerning land holding, tenure, income, and yields is used in this section to make a comparison among nondefaulting, defaulting and nonborrowing farm households.

5.2.1 Paddy land holdings

If two farm households with very large holdings are excluded then, nondefaulters and defaulters have an average 1.48 hectares, and 1.40 hectares of paddy land respectively as shown in table 5.1. Nondefaulters therefore have slightly larger holdings, but not significantly so. This indicates that there is no statistically significant difference between the extent of paddy land operated by nondefaulting and defaulting households in the project area. Neither do differences in the percentage area under major irrigation nor the percentage area cultivated in *yala*, suggest any striking differences between the quality of paddy land cultivated by defaulters and nondefaulters. In contrast, nonborrowers cultivated on average a smaller holding. A larger proportion of their lands were under minor irrigation works and cropped in *maha* only.

Table 5.1 - Paddy land Holdings, Irrigation availability and Cultivation during *yala*

	Number of farms	Mean paddy holding* (ha)	Percentage area under major irrigation	Percentage area cultivated in *yala*
Defaulters	72	1.40 (.75)	99	80.6
Nondefaulters	44**	1.48 (.67)	98	80.9
Nonborrowers	31	1.11 (.57)	88.2	75.0

* Standard deviations are given in brackets.

** Two nondefaulting farm households cultivating 14.57 hectares and 7.69 hectares respectively are excluded from the computations. If they are included the mean paddy holding of nondefaulters is 1.9 hectares with a standard deviation on 2.22 hectares.

5.2.2 Tenure

When the tenurial conditions of nondefaulters and defaulters are considered there are noticeable differences between these two groups of borrowers (Table 5.2). A larger percentage of paddy holdings of defaulters are under some form of tenancy, whereas nondefaulters are predominantly owner cultivators.

Table 5.2 - Percentage Distribution of Area and Farms according to Tenurial Category

	Tenants		Owners		Encroachers	
	Area (ha)	Farms*	Area (ha)	Farms*	Area (ha)	Farms*
Defaulters	66	58.3	33.2	37.5	.8	1.4
Nondefaulters	37.7	43.5	59.5	47.8	2.8	-
Nonborrowers	66.5**	58**	-	-	-	-

* An additional 2.8 percent defaulters and 8.7 percent of nondefaulters have holdings of mixed tenure.

** These percentages include 5.9 percent of area and 6.4 percent of nonborrowers who lease in land.

The share of harvest paid out in land rental increases the production costs of tenants relative to those of owner-operators. Tenancy was more prevalent among defaulters than among nondefaulters both in terms of area and number of farms. Hence, one might be tempted to conclude that tenancy contributes to defaulting because payment of land rent erodes the capacity to repay loans. However, the occurrence of tenancy among nondefaulters is also considerable (44 percent). Further, it is known that some farmers find it profitable to lease in land at about Rs. 2,500 to Rs. 3,000 per hectare. Therefore, it appears that tenancy, by itself, cannot be considered as a constraint to loan repayment.[1]

1 In the project area some tenants pay a fixed rental of .62 tonne per hectare whereas others pay 25 percent and occasionally 33 percent of the harvest as rent. Although the real rental rate varies with the price of paddy this is probably a lower rent than that paid for leasing in land, which varied between Rs. 2470 to Rs. 2964 per hectare during the period of study.

5.2.3 Off-farm income

Particulars were collected concerning the number of farmers with off-farm income sources and are summarized in Table 5.3. The percentage of households within each category with incomes from sources other than the sale of farm produce was 80 percent for nonborrowers, 40 percent for nondefaulters, and 57 percent for defaulters. However, to interpret these figures it is useful to take a closer look at the average size of off-farm incomes and occupation.

Table 5.3 - Distribution of Types of Households by Sources of Off-farm Income

Source of Income	Defaulters		Nondefaulters		Nonborrowers	
	No.	Percent	No.	Percent	No.	Percent
Labour	13	31.7	4	21	8	36.4
Government employment*	9	22.0	12	63.2	-	-
Small business**	10	24.4	-	-	7	31.8
Tractor and/or rice mill, and trading	3	7.3	3	15.8	5	27.7
Casual tractor operation	6	14.6	-	-	-	-
Fishing	-	-	-	-	2	9.0
Total	41	100	19	100	22	100
Average off-farm income per household per annum (Rs.)	4902 (3397)		7422 (4992)		8307 (13,720)	

* Teacher, clerk, cultivation officer etc.

** Tailor, boutique keeper, blacksmith, etc.
Standard deviations given in brackets.

The average off-farm income of nonborrowers is marked by a large standard deviation and is inflated by the earnings of five

of the sample who had substantial incomes from trading, rice milling and tractor operations. This category had the lowest percentage of farmers engaged only in farming, the highest percentage of labourers and an absence of government employees. Taken together these factors suggest that nonborrowers from instditutional sources are composed of households at both the upper and lower ends of the income spectrum.

Those defaulters who have additional sources of income earn a significantly lower average amount than the nondefaulters. A comparison of income sources demonstrates that the dominant source of employment of nondefaulters is government jobs with regular monthly salaries. A smaller percentage of nondefaulters than defaulters are involved in labouring and none are small businessmen. Both types of occupations provide a less regular remuneration and tend to be associated with farmers from lower income groups who find it difficult to subsist on the production from their farms.

It is worth noting some of the advantages a steady source of off-farm income gives to a farm household. Firstly, it increases a households capacity to finance cultivation out of their own savings. If the level of institutional credit falls short of the costs of cultivation, the farmer is less likely to become indebted to noninstitutional credit sources. Secondly, during the period between planting and harvest, when there is no remuneration from the farm, essential consumption expenditure can be met out of off-farm earnings. Thirdly, a regular source of off-farm income enables a household to weather a difficult season and meet institutional debt obligations in a way that might be impossible for other farm households. Thus a steady off-farm income contributes to a borrower's repayment capacity and his ability to remain within the institutional credit programme.

The data on off-farm income alone cannot be used to demonstrate a clear correlation between income and repayment of cultivation loans. Yet, they have illustrated certain contrasts between defaulting and nondefaulting households which suggest that the former group have lower and less regular sources of off-farm

income. Over one third of defaulting households compared to one fifth of nondefaulting households, indicated that they regularly contracted loans for consumption purposes from private sources. Since the need to take credit for consumption is associated with households which also have lower and less regular incomes, it is natural to expect a link between nonrepayment of cultivation loans and nonavailability of cash surplus after meeting subsistence requirements.

5.2.4 Disposal of paddy harvests

The disposal of harvests in two particular seasons is shown in Table 5.4 for nondefaulting and defaulting households. In making a comparison of the disposal of the paddy harvest in *maha* 1979/80 and *yala* 1980 for defaulting and nondefaulting households it is relevant to include in the analysis only those farmers who actually defaulted in either of these seasons. Since 37 households in the sample defaulted in *maha* and nine in *yala* these households are included in the analysis.

Table 5.4

(a) Disposal of Paddy Harvest *maha* 1979/80
(as percent of total harvest)

	Marketed	Kind repayments on debts	Rent	Retained for consumption
Nondefaulters	45.1	14.2	10.0	30.7
Defaulters*	35.0	22.3	16.0	26.7

(b) Disposal of Paddy Harvest *yala* 1980
(as percent of total harvest)

	Marketed	Kind repayments on debts	Rent	Retained for consumption
Nondefaulters	50.9	13.9	9.6	25.6
Defaulters**	43.4	18.7	17.0	20.9

* Include only the 36 farm households defaulting on cultivation loans disbursed in *maha* 1979/80.

** Includes only the 9 farm households defaulting on cultivation loans disbursed for *yala* 1980.

Both types of farmers retained a slightly lower proportion of their harvest for consumption in *yala* than in *maha*. In both seasons nondefaulters retained a higher percentage of paddy harvested for home consumption than the defaulters, but not significantly higher. However, a contrast between defaulting and nondefaulting households is evident when the disposal of the remainder of the crop is considered. Both groups disposed portions of their harvests as repayment in kind for loans from noninstitutional sources. Debts that were due in kind included payment for cultivation services - such as land preparation and threshing - and repayment of cash loans. In both seasons a larger percentage of the harvest of defaulters, compared to that of nondefaulters was used to make good such debts. Indeed, this proportion of the harvest accounted for only a few percent less than defaulting households retained for home consumption. This indicates clearly that defaulting households had a larger debt obligation to private lenders than did nondefaulters. Since the repayment of loans from noninstitutional sources generally receives priority, such debts probably undermined the borrower's ability to repay institutional credit.

In both seasons the nondefaulting households were able to market a greater portions of their harvests than did the defaulting households. However, this marketed surplus accounted for the highest percentage of crops disposed in all instances. Though the portion paid out as rent by each group remained almost the same in both seasons the portion paid by defaulters was always greater. This observation tends to support the relationship between tenancy and defaulting suggested earlier.

If there existed differences in the yields of defaulters and nondefaulters this would partly explain variations in their disposal of the crop noted above. However, as shown in Table 5.5 there is little evidence that the mean yield per hectare of nondefaulting households is significantly higher than that of defaulters in either season. In *maha* the mean yield per hectare of nondefaulters was 3.56 metric tons, and that of defaulters

slightly lower. But it is defaulters who have the highest mean yield in *yala*. Therefore, defaulting cannot be attributed to differences in productivity.

Table 5.5 - Paddy Yields per Hectare *maha* 1979/80 and *yala* 1980 (in metric tons)

	Maha 1979/80	*Yala* 1980
Nondefaulters	3.56 (1.09)	3.24 (1.08)
Defaulters	3.27 (1.11)	3.26 (1.14)

Note - Standard deviations are given in brackets.

5.2.5 Borrowers past history with institutional credit

Since details were collected from the sample households concerning all loans contracted between *yala* 1977 and *yala* 1980 inclusive, it is possible to study their past history of borrowing from institutional sources. It is particularly interesting to note the number of first time borrowers amongst defaulters. Twenty eight farmers - almost 40 percent of the sample - defaulted on the first occasion they took a cultivation loan under the Comprehensive Rural Credit Scheme. The significance of this finding can be further demonstrated by examining for each season how many loans were issued to first time borrowers and observing what percentage of these farmers defaulted.

The first column in Table 5.6 records the number of first time borrowers among all defaulters and nondefaulters in the sample for each season. The other three columns record their subsequent performance in relation to institutional credit until the time of the survey (*maha* 1980/81).

Table 5.6 - Performance of First Time Borrowers

Season	Total number of new borrowers	Defaulted	Repaid loan but stopped borrowing	Repaid loan and continued borrowing
Yala 1977	-	-	-	-
Maha 1977/78	2	2	-	-
Yala 1978	1	-	-	1
Maha 1978/79	18	13	2	3
Yala 1979	1	1	-	-
Maha 1979/80	13	10	1	2
Yala 1980	3	2	-	1
	38	28	3	7

The above data make it clear that only about a quarter of the first time borrowers repaid their loans. Even among them a few preferred to obtain their subsequent loans from noninstitutional sources. These figures may point to a certain lack of proficiency on the part of the lending agencies in lending to new borrowers, who are characterised by a 74 percent probability of defaulting in their first loan season. Those households currently repaying cultivation loans are generally those which have a reasonably long experience of regularly taking credit for paddy production. They value the bank as a source of low interest credit and consequently can be relied upon to repay loans with very little supervision from the bank.

In summary, the above comparison of various characteristics of defaulting and nondefaulting households has demonstrated that although there exists little contrast between the two groups in terms of land holding size and productivity, there are differences indicating that defaulters generally exhibited a lower capacity to repay cultivation loans. A wider prevalence of tenancy amongst defaulters and the higher percentage of their harvest required to make good debts in kind may have contributed to poor repayment. The types of occupations that were the source of off-farm income for defaulting households largely provided

lower and less regular earnings than those pursued by nondefaulters. Finally, almost three quarters of the borrowers in the sample who took cultivation loans for the first time between *yala* 1977 and *yala* 1980 defaulted. This indicates that first time borrowers may constitute a particularly high risk lending group, but also calls into question the competency of the lending agencies with regard to these borrowers.

5.3 REASONS FOR DEFAULT

The conceptual framework for analysing the causes of default presented in Chapter two is used below to examine the motives for default identified by farmers themselves. The percentage of farmers in each category of default is shown in Table 5.7. Although each defaulter has been allocated to only one of these categories, it is recognised that this is an over simplification since farmers' decisions to default consciously takes into account a number of factors simultaneously. Such factors include (a) his material ability to repay the loan; (b) whether he wishes to receive institutional credit in future seasons and therefore has an incentive to remain eligible for credit; (c) his preferred present level of income and consumption; and (d) the consequences he perceives of not repaying the loan. Nevertheless, categorizing defaulters on the basis of the most dominant reason for defaulting disclosed by them is a useful indication of the relative importance of the factors bearing on default in the Kirindi Oya Project area.

5.3.1 Inadequacies in the agrarian structure

Only a small percentage of respondents attributed their defaulting to inadequacies in the agrarian structure like small sizes of holdings, tenancy etc. However, detailed discussions with these farmers indicated that they would have been able to pay back the loans if they tried hard and severely curtailed home consumption. Further in the establishment of priorities for expenditure, these households relegated the repayment of institutional loans to a lower order. The net result of these considerations has been the continuation of the normal level of household consumption in preference to the vaguely perceived penalties for nonrepayment.

Table 5.7 - Defaulters and Reasons for Default

Reason	Number of defaulters	Percentage of defaulters
Inadequacies in the agrarian structure	4	5.6
Misallocation of funds (Illness-2, Wedding-1. other debts-4, other investments-6)	13	18
Crop failure (pests-19, drought-5, other specified reasons-9, unspecified-16)	49	66.6
Deficiencies in the credit organisation	1	2.8
Attitudinal factors	1	1.4
Others	4	5.6
Total	72	100.0

Defaulters in this category constitute a much lower proportion of the total sample than did the 19 percent of defaults for analogous reason recorded in the Central Bank's 1967 to 1970 survey. Although this may partly be due to the difficulty of accurately identifying such households, it should also be noted that over the four seasons considered here, borrowers have farmed irrigated paddy holdings of a size larger than average for the project area (also see chapter four). Under these circumstances inadequacies in the agrarian structure are less likely to be quoted as a legitimate reason for default.

5.3.2 Crop failure

Crop failure was regarded as the main reason for delinquency by the defaulters themselves.[1] As much as 66 percent of loans

1 In this study the terms defaulting delinquency are used synonymously. Some authors use defaulting to describe complete nonrepayment and delinquency to mean partial nonrepayment.

outstanding were attributed to crop failure. Although 16 percent of defaulters did not specify the causes for poor harvests, those who did so ascribed their lower than expected yields to pest attacks. This suggests that for almost 40 percent of the defaulters in this category crop failures may have been prevented through the timely use of pesticides. A number of farmers did indicate that they had experienced difficulty in obtaining pesticides. This points to a problem in the supply of agricultural inputs rather than lack of knowledge. Other specified reasons for crop failure identified by a small number of defaulters include, lack of water, poor soil conditions, flooding, and poor germination.

Since yield data are available for *maha* 1979/80 and *yala* 1980, it is possible to examine the extent of crop failure experienced by defaulters. In Table 5.8 the distribution of the defaulters over the range of yields are shown for both seasons.

Without the details of yields per hectare expected by farmers in a normal season it is difficult to judge whether a particular yield level amounts to crop failure. However, if the mean yield of defaulters is compared with the mean yield of nondefaulters in *maha*, it is found that 36 percent of those claiming poor harvested yields above the mean yield of nondefaulters (3.61 tonnes per hectare). In *yala*, two defaulters (40 percent) had yields above the mean yield of nondefaulters (3.56 m/tonnes per hectare). Therefore, the importance of crop failure as a cause of default appears to have been exaggerated if yields of defaulters are compared to the mean yields of nondefaulters. However, it may be argued that there is no identifiable yield against which a poor harvest may be defined. If a producer normally expects yields in excess of 5.15 tonnes per hectare, (which is not unusual in some parts of the project area), then for him a yield of four tonnes per hectare is a partial crop failure, and his revenue falls below that which he had expected to be available to meet all his production and consumption expenses. Nevertheless, in the event of a partial crop failure it might be anticipated that borrowers would be able, at least,

to repay part of their cultivation loan. The number of farmers who did in fact do this is shown in Table 5.8.

Table 5.8 - Yield Levels and Partial Repayment of Cultivation Loans by Defaulting Farmers

Tonnes per hectare	*Maha* 1980/81*		*Yala* 1980**	
	Number of farm households	Number of farm households repaying loans in part	Number of farm households	Number of farm households repaying loans in part
Less than 1.50	2	0	-	-
1.51 - 2.60	8	5	3	1
2.61 - 3.09	5	2	-	-
3.10 - 3.61	3	1	-	-
3.62 - 4.12	5	1	2	1
4.13 - 4.64	2	0	-	-
4.65 - 5.15	2	0	-	-
above - 5.16	1	0	-	-

* 37 borrowers defaulted on loans disbursed for *maha* 1979/80 and of these 28 attributed default to crop failure.

** 9 borrowers defaulted on loans disbursed for *yala* 1980, and of thes- five attributed default to crop failure.

In *maha* those defaulters with relatively higher yields did not make any attempt to repay even portions of their loans. This clearly indicates their unwillingness towards repayment and suggests that crop failure was a fabricated excuse for default. On the other hand, more than half the defaulters with yields below 3.1 tonnes per hectare had repaid in part the cultivation loan outstanding. Only one farmer had used an insurance indemnity to this end and the remainder had paid with the proceeds from the current season's harvest or that of the following one. In *yala* 1980 two defaulters partially repaid loans, one from the current season's harvest and a loan from a private source, and the other with the harvest from *maha* 1980/81.

Lending agencies need to make a greater effort to encourage farmers to at least partially repay loans instead of allowing them to completely default when repayment difficulties arise after poor harvests.

Once loans remained unrepaid for sometime it becomes increasingly difficult to recover them since the small surpluses that are available in the season in which the loans were taken have subsequently been allocated to consumption. To find cash to make good past debts from future harvests is not easy when farmers have other obligations to meet from the proceeds of a harvest.

5.3.3 Attitudes towards nonrepayment

Although only one farmer actually gave a reason for nonrepayment which can be included under this heading,[1] the number of defaulters partially repaying loans may be taken as an indication of borrowers'willingness to fulfil their institutional debt obligations. Only a third of the whole sample of defaulters partly repaid their outstanding loans. This suggests that the repayment of institutional credit were accorded low priority by at least two thirds of defaulters.

5.3.4 Deficiencies in credit organisation

Defaulters did not generally call into question the integrity of bank officers or blame the lending institution for their nonrepayment of cultivation loans. Only one farmer complained that his loan had been late and it prevented him from buying necessary pesticides on time. This is in contrast to the findings of earlier surveys on default which are replete with references to

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1 After being a regular and reliable borrower over a number of seasons he decided, on the basis that he did not require any future loans, not to repay his cultivation loan for *maha* 1979/80. He claimed that the bank had sent him no statements. Nor has any officer visited him. Although the farmer is able to repay the loan it will probably remain unrepaid until the bank shows an interest in recovering it.

the apathy and mismanagement of the cooperatives through which cultivation credit was channelled. The switch to direct lending appears therefore to have been welcomed by farmers. On the other hand, the extent to which banks fail to follow up loan defaultings suggests certain inefficiencies on their part. The number of statements sent to defaulters are recorded in Table 5.9.

Table 5.9 - Loan follow up Procedures; *maha* 1978/79 to *yala* 1980

Number of reminders sent per defaulter	:	0	1	2	more than 2
Number of defaulters	:	38	15	8	11

Seventy eight percent of defaulters had not been visited by bank officials. Officers of the two People's Bank branches at Hambantota and Tissamaharama had made more farm visits than those of the Bank of Ceylon. Out of 23 farmers defaulting on loans taken from the People's Bank 15 defaulters had been visited at least once. On the other hand, only one out of 49 defaulters of loans taken from the Bank of Ceylon had been visited, indicating a certain indifference to loan recovery on the part of that bank.

Defaulters were also asked whether any other official - such as a *Grama Sevaka* or cultivation officer was aware that they were defaulters. This was the case in only one instance. This implies very little contact between the banks and other village level officers involved in agricultural development regarding loan recovery.

5.3.5 Misallocation of funds

Use of funds for other purposes was the most important reason given for nonrepayment after crop failure. Unforeseen expenditure caused by illness, ceremonial obligations, indebtedness, and investment for other purposes accounted for about 18 percent of defaults. In past studies much emphasis had been given towards preventing this cause of default through careful supervision of loans. It is generally contended that such misallocations prevent the farmer from utilising credit for

productive purposes thus leading to poor yields and consequent defaulting. However, in this study it was found that the misallocation of funds was generally a post harvest phenomenon and that it was associated with the low priority given by defaulters to repaying loans from public sources. Priority therefore needs to be given to developing a loan recovery system which discourage such attitudes.

5.4 CONCLUSION

There has been since *maha* 1977/78 a significant contraction in the volume of institutional credit extended for paddy cultivation in the project area. Further, it has been established that often it is farmers with above average paddy holdings who are in receipt of these cultivation loans. However, although the percentage of loans in default in the project area has been lower in recent seasons than in *maha* 1977/78 and the immediately preceding seasons, the above analysis demonstrates that the reasons given for nonrepayment of loans do not differ markedly in importance from those found in previous surveys of default.

Variability in income caused by fortuitous and seasonal factors is the main reason for nonrepayment that farmers themselves identified. But yield statistics indicate a tendency for defaulters to exaggerate their inability to repay cultivation loans due to crop failure.

Weakness in the recovery mechamism of lending agencies and borrowers' attitudes to nonrepayment emerge as factors limiting even partial repayment of cultivation loans by defaulters. The prospect of ineligibility for further cultivation loans acted as sufficient incentive to some defaulters to repay in part their outstanding loans. But such farmers constituted only a third of all defaulters.

The absence of an effective loan recovery mechanism on the part of banks in the project area is highlighted by their poor record of contact with defaulting farmers. Thus, it would appear that the higher percentage of cultivation loans that have been recovered since *yala* 1978 has not been the result of changes that have taken place in the ability of banks to recover loans. Rather, this improvement in the

recovery rates can generally be attributed to the current selection procedure for borrowers and the type of farmers now remaining in the credit scheme.

An active interest in recovering unrepaid loans is sadly lacking in the project area, particularly on the part of the Bank of Ceylon which is the dominant lender. There appears to be a good case for sustaining higher supervision costs to ensure lower default rates. Special attention in credit supervision seems to be indicated in the case of first-time-borrowers and during post harvest periods to prevent defaulting. Supervision has the advantage of encouraging better credit discipline amongst institutional borrowers. Such supervision and follow-up action will eventually allow a reduction in supervising activities and costs, whereas unchecked delinquencies will only cause the situation to worsen.

Chapter Six

FINANCING PADDY CULTIVATION IN MAHA

In this chapter information collected in the field survey concerning the means by which farmers financed paddy cultivation in *maha* 1980/81 provides an insight into the use and adequacy of institutional loans. It further helps to illustrate how defaulting farmers finance cultivation when ineligible for institutional credit.[1] In addition to examining the sources of credit and purposes for which loans are utilized by farmers, the extent to which farmers receive services and inputs on credit from private sources is also considered. The latter type of credit is frequently ignored in surveys, leading to an underestimation of the total credit used by producers in paddy cultivation.

It is useful to find out whether there are any significant differences in expenditure per hectare on fertiliser, pesticides and weedicides among farmers with access to institutional credit, farmers using only non-institutional credit and farmers financing cultivation from their own funds. This examination is carried out in the final section of this chapter.

6.1 PADDY CULTIVATION IN *MAHA* 1980/81

Not all farm households in the sample cultivated paddy in 1980/81. This was either due to insufficient water for cultivation or because their paddy lands were leased to other farmers. Table 6.1

1 In section 6.1-6.4 the grouping of the sample into non-defaulters, defaulters and non-borrowers from institutional sources, is based on farmer's borrowing record over the period *maha* 1978/79 - *yala* 1980. In section 6.5, the sample is recategorised into new farmer groups based on *maha* 1980/81 cultivation season.

shows the number of households in the sample who cultivated paddy in *maha* 1980/81.

Table 6.1 - Cultivating and non-cultivating households

Cultivating households		Households not cultivating due to:	
		(a) insufficient water	(b) leasing out the land
Defaulters	67	1	4
Non-defaulters	45	1	-
Non-borrowers	24	3	3

The extent of non-cultivation was highest amongst the non-borrowing farmer group, eight (25 percent) of whom did not cultivate paddy in *maha* 1980/81. Over half of those not cultivating stated that they had leased out their lands because they did not have adequate resources to finance cultivation themselves. Insufficient water for cultivation was also an important reason for non-cultivation amongst non-borrowers. This situation reflects the higher number of farmers in this group cultivating under minor irrigation or rainfed conditions.

About seven percent of defaulters in the sample had not cultivated in *maha* 1980/81. According to them the main reason for this was inadequate resources to finance cultivation themselves. It would thus appear that for some defaulters their subsequent ineligibility for further institutional credit affects their ability to continue cultivating.

Only one non-defaulting household failed to cultivate paddy during the season and this was due to lack of water.

6.2 USE OF CREDIT AMONGST CULTIVATING HOUSEHOLDS-*MAHA* 1980/81

The extent to which credit was used for paddy cultivation amongst the three groups in the sample is shown in Table 6.2.

Table 6.2 - Use of credit by cultivating households

	Non-defaulters	Defaulters	Non-borrowers
Number of households cultivating	45	67	24
Number of households taking loans from any source for cultivation purposes	39(87%)	55(82%)	18(75%)
Average loan per borrower (Rs)	3951.2	3226.8	2098.9
Average loan per hectare (Rs)	2776.3 (SD1071.0)	2364.5 (SD1242.2)	2207.2 (SD1769.0)

Of those farmers who had not taken credit from institutional sources over the period *maha* 1978/79 to *yala* 1980 (non-borrowers), 75 percent contracted loans from private sources during *maha* 1980/81. However, the average amount borrowed per farmer and the average loan per hectare was lowest amongst this group and also exhibited the widest variation among borrowers.

Non-defaulting households, for whom the dominant source of credit is low interest institutional loans, borrowed the highest amount per farmer and per hectare of paddy cultivated.

The survey showed that without access to institutional credit, 83 percent of defaulting households cultivating in *maha* 1980/81, continued to finance a substantial part of their paddy cultivation with short-term from non-institutional sources. However, these loans carried interest rates substantially above those charged by banks. Their level of borrowing was only a little lower than that of non-defaulters.

6.3 SOURCE OF CREDIT FOR PADDY CULTIVATION-*MAHA* 1980/81

The type of loans given for cultivation purposes have been classified into five categories for the purpose of considering the different types of credit used by each farmer group in the sample. The classification includes two types of institutional loans and three types of non-institutional loans (i.e. loans from friends, relatives, money-lenders, tractor owners etc.). The percentage of total cultivation credit provided by each, is shown in Table 6.3 for the three types of households.

Table 6.3 - Composition of credit;*maha* 1980/81

Loan type	Defaulters	Non-defaulters	Non-borrowers
Institutional			
Cultivation loan under the comprehensive rural credit scheme	0	71.2	0
Pawning	7.1	2.5	4.6
Non-institutional			
Cash loan without interest	10.2	4.0	15.9
Cash loan with interest, repayable in kind (paddy)	46.6	8.2	36.5
Cash loan with interest repayable in cash	36.1	14.1	42.9

6.3.1 Non-defaulting households

As might be expected, the dominant source of credit for non-defaulters is cultivation loans under the comprehensive rural scheme. The average institutional loan per hectare per farmer was slightly less than the maximum allowed under the scheme for broadcast paddy (which is cultivated by a majority of borrowers) and about Rs. 500 less than the maximum for transplanted paddy. It was Rs. 2380 (SD 311.0) for farmers cultivating broadcast paddy and Rs. 2680 (SD 467.8) for farmers transplanting.[1] These figures contrast with earlier cultivation seasons when, as demonstrated in chapter four, the average loan taken per hectare per borrower was Rs. 500-Rs. 700 less than the credit ceiling. This is particularly true in the case of broadcast paddy.

The contrast probably reflects adjustments that have taken place in the credit ceilings for individual components of loans. As was noted in chapter four, reluctance to take the full loan component for fertiliser, pesticides and weedicides explained why some farmers were not borrowing the maximum loan per hectare.

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1 In *maha* 1980/81 farmers cultivating new improved varieties under irrigation could borrow up to Rs. 3211/- per hectare, if they transplanted, and up to Rs. 2470/- per hectare, if they broadcast.

In the last two seasons, the credit ceilings for agro-chemicals have been adjusted downwards. With recent increases in tractor and labour costs, the credit ceiling for land preparation has however been adjusted upwards (Table 6 of Appendix 1). Since credit for land preparation is disbursed in cash whereas for agro-chemicals it is given in kind, there has been a relative shift since *maha* 1979/80 in the percentage of a loan that is provided in cash and kind.[1] Thus, adjustments in the credit ceilings for individual components of the loan and their subsequent effect on the percentage of the loan available in cash (and hence flexible in its usage), probably explains why farmers cultivating irrigated broadcast paddy borrowed close to the maximum loan allowed per hectare. It is also worth noting that these adjustments have resulted in an overall decline in the standard scale of finance for irrigated broadcast paddy. At Rs. 2470/- per hectare, this is now at its lowest since *maha* 1977/78 and undoubtedly well below cultivation costs. This factor also contributes to producers borrowing close to the credit ceiling.

That cultivation costs are in excess of the available institutional credit is supported by the fact that farmers contracting institutional loans also found it necessary, to a limited extent, to take additional funds for cultivation from non-institutional sources. These supplementary loans were pre-dominantly in cash with interest charged at the rate of 10 percent per month (see Table 6.3).

6.3.2 Defaulting households

Nearly 90 percent of non-institutional loans taken by defaulters were loans on which interest was payable. Only 10 percent of total cultivation credit extended to such households were free of interest.

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1 In *maha* 1980/81 50 percent of the loan for irrigated broadcast paddy was for seed paddy, fertiliser, weed and pest and disease control. This was therefore, disbursed in kind. This, contrasts with 70 percent in *maha* 1979/80. For irrigated transplanted paddy, the percentage of the loan disbursed in kind, was 43 percent in *maha* 1980/81 and 53 percent in *maha* 1979/80.

Most of the private loans carried with them the obligation of repayment in kind (paddy). Farmers borrowed cash, usually at the start of the season, and repaid the lender in paddy after harvest. A fairly standard scale of repayment exists in the project area. One *ammuna* of paddy (7 bushels or 146 m/tons) is generally repaid for Rs. 250/- or Rs. 200/- loaned in cash. Assuming that the loan is contracted for six months and using the guaranteed price of paddy, an interest rate can be imputed.[1] This would be in the first case 94 percent and in the second 167.5 percent per annum. It is interesting to note that some farmers said these rates were negotiable at the end of the season if the price of the paddy had risen to unexpected heights. This had been the experience of a few debtors following the increase in paddy prices after *maha* 1979/80. But for the majority of borrowers the rates remain fixed. The lender is in a position to gain substantially from the transaction, especially since paddy may be sold above the guaranteed price. The rates of interest estimated above may thus be regarded as conservative.

A lesser but still substantial percentage of credit extended to defaulters was in the form of loans repayable in cash. Interest was charged at 10 percent per month, although a few households were paying 15 and 20 percent per month.

6.3.3 Households borrowing only from non-institutional sources

A higher percentage of total credit extended to these farmers as compared to defaulters and nondefaulters was in the form of interest-free loans. However, the amount was less than 16 percent. This shows that loans with interest are the predominant type of noninstitutional credit available in the project area. Loans with interest repayable in cash at the rate of 10 or 20 percent per month were the predominant type of credit for this group, although around 36 percent of loans were still repayable in kind.

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1 Guaranteed price of paddy in *maha* 1980/81 was Rs. 52.5 per bushel.

6.4 SERVICES AND INPUTS ON CREDIT FROM PRIVATE SOURCES

One form of credit available to farmers which is frequently ignored when considering cultivation credit is the provision of cultivation services and inputs on credit by private sources. Such credit is usually repaid in paddy (in kind) at the end of the season. Table 6.4 shows the percentage of nondefaulting, defaulting and nonborrowing households who in *maha* 1980/81, received seed paddy or had land preparation done for them on credit.[1]

Table 6.4 - Use of services and inputs on credit*

	Non-defaulters (percent)	Defaulters (percent)	Non-borrowers (percent)
Seed paddy	12.5	53.0	36.0
Land preparation	71.5	92.4	64.0

* Only the 32 nondefaulters taking institutional credit in *maha* 1980/81 have been included in Table 6.4. This is to enable a comparison between households with access to institutional credit and those with no access.

In all three groups, a smaller percentage of households obtained seed paddy on credit compared to the number of households getting land preparation done on credit. For the majority of farmers in receipt of institutional cultivation loans it was unnecessary to obtain seed paddy on credit from private sources. On the other hand, over 50 percent of defaulting households obtained seed paddy in this manner. This was mainly provided by other farmers, landlords and tractor owners. Obtaining seed paddy in this way probably doubled seed cost per hectare, since farmers at harvest time had to repay nearly double the quantity of paddy they borrowed for seed.

The percentage of households in each group having their land preparation carried out on credit was substantial. All defaulters

1 Threshing is also paid for in kind. But since this payment is made immediately, the transaction cannot be really referred to as a credit operation.

deferred payment for land preparation with the exception of a few who had their own tractors. A high percentage of nondefaulters although in receipt of institutional loans, nonetheless made such arrangements. This indicates that over 70 percent of households receiving institutional credit used the land preparation component of the loan for some other purpose. There are two possible reasons for this phenomenon. One is that the tractor owners prefer to obtain payment in paddy on terms that give them higher returns compared to prevailing cash rates for the services provided by them. The other reason is that the farmers prefer to utilise whatever cash available for immediate needs of both consumption and production and put off payment for land preparation to the end of the season since this facility is readily available. The former is the more likely of the two reasons as some farmers claimed that tractor owners actually encourage them to make payments in paddy at the end of the season.

Some evidence relating to the above arguments is provided by examining the amounts paid in paddy by defaulters and nondefaulters for land preparation in *maha* 1980/81. This is shown separately for two and four wheel tractors in Table 6.5. The cash cost was imputed using the minimum value of paddy prevailing in the area at the time.[1]

Table 6.5 - Mean expenditure on land preparation

	Defaulters	Non-defaulters
2 wheel tractor (t/ha)	.39(SD.04)	.40(SD.04)
Imputed cash cost (Rs/ha)	1215	1246
4 wheel tractor (t/ha)	.48(SD.07)	.44(SD.07)
Imputed cash cost (Rs/ha)	1496	1371

Overall, land preparation using a two wheel tractor was least expensive and most widespread amongst both farmer groups. The majority of producers paid .36 t/ha (7 bushels per acre) for land preparation

1 Guaranteed price of paddy in *maha* 1980/81 was Rs. 2517 per tonne, however, the price at which farmers sold the paddy varied from Rs. 3116 to Rs. 3595 per tonne during this season.

by a two wheel tractor, though a few producers paying more than this increased the mean expenditure of farmers in the sample. This variation in costs probably reflects differences in the services provided by the tractor, but may also be related to the bargaining power of the farmer. The rates for land preparation by a four wheel tractor were higher and more variable, ranging from .41 to .57 tonnes per hectare. The imputed cash cost of land preparation by tractor varies from Rs. 1215 to Rs. 1496 per hectare. Data available from the small number of farmers in the sample paying for land preparation in cash immediately, indicates a cost of between Rs. 865-990 per hectare. Therefore, it would seem that in postponing payment for land preparation until after the harvest, producers incur a considerable additional cost. Conversely, tractor owners obtain additional profits by encouraging farmers to get their land preparation done on these terms. This may in turn lure farmers in receipt of institutional loans to use the land preparation component of the laon for other purposes. In such instances the farmers may experience difficulty after the harvest in repaying their institutional loans in full in addition to repaying the tractor owner. This might be a contributory cause towards defaulting of institutional credit.

Apart from the cost of the tractor services in land preparation, other expenses incurred by the farmer include labour costs associated with clearing of channels plastering of bunds and levelling. A substantial number of households in the sample made use of hired labour for these activities. In addition to paying for tractor services they paid out Rs. 350/- to Rs. 500/- per hectare on labour costs. Hence, total land preparation expenses if paid immediately in cash, would have been in the order of Rs. 1200/- - Rs. 1500/- per hectare. This is considerably less than the credit ceiling of between Rs. 865-990 per hectare for land preparation under the Comprehensive Rural Credit Scheme. Hence, there seem to be some validity in the previous contention that borrowers find it necessary to seek additional credit in the form of tractor services. This however, issue partly to the inadequacy of the institutional loan component for land preparation.

6.5 EXPENDITURE ON FERTILISER, PESTICIDES AND WEEDICIDES

One of the prime objectives of providing agricultural credit is to promote the acceptance of the improved package of practices which require a high cash outlay. Correct doses of fertiliser and agrochemicals and their timely application are important components of this package of practices. Hence it is useful to examine the relationship between the use of institutional credit and the use of fertiliser and agrochemicals for this sample of farmers.

For this analysis the sample was categorised into six groups based on the types of finance available to the farmers (i.e. institutional loans, noninstitutional loans, and self finance) and whether they broadcasted the seed or adopted transplanting. This analysis is presented in Table 5 of Appendix I. This indicates that when taken separately a higher percentage of the expenditure on these inputs goes into fertiliser and the least on weedicides. The only differences of statistical significance were the expenditure on fertiliser between institutional credit users and noninstitutional credit users, and the expenditure on weedicides between the institutional credit users and the other two groups.

When the data is aggregated and analysed a more definitive pattern emerges. This is presented in table 6.6 below.

Table 6.6 - Expenditure on fertiliser and agrochemicals

Farmer category	Mean expenditure per hectare Rs.	Standard deviation
Institutional credit users	1349*	771.4
Non-institutional credit users	976	355.1
Self financing farmers	957	520.1

* Significant at 5 percent level.

The expenditure on these inputs by institutional credit users is considerably higher than those by the other two groups of farmers. Hence we may surmise that institutional credit influences farmers to use higher levels of these inputs. However we cannot discount the possibility that use of inputs and use of institutional credit are both essential characteristics of this group of farmers. The high standard deviations indicate high variability in the extent of adoption of these practices.

For *maha* 1980/81 the credit ceilings per hectare for fertiliser, weedicides and pesticides under the comprehensive rural credit scheme were Rs. 370, Rs. 370 and Rs. 198 respectively for irrigated broadcast paddy, and Rs. 494, Rs. 247 and Rs. 494 for irrigated transplanted paddy. These ceilings assume lower fertiliser and pesticide costs in cultivating broadcast paddy and lower weedicide costs in cultivating transplanted paddy.

In Table 7 of Appendix 1 it can be seen that the payments on fertiliser and agrochemicals by institutional credit users agree with these assumptions. Mean expenditure per hectare on fertiliser and pesticides is higher for farmers cultivating transplanted paddy, through farmers cultivating broadcast paddy do have the higher weedicide expenditure. However, these differences are statistically significant only in the case of expenditure on pesticides by non-institutional credit users. Farmers in this category cultivating transplanted paddy spent almost twice as much per hectare on pesticides than farmers in all categories cultivating broadcast paddy.

A comparison of credit ceilings with the actual payments per hectare on fertiliser and agrochemicals by institutional credit users demonstrates that credit ceilings were in almost every instance inadequate to cover the cost of paddy cultivation in *maha* 1980/81. Only in the case of expenditure on weedicides by farmers cultivating broadcast paddy was the credit ceiling sufficient.

Whilst farmers should be encouraged to meet a part of their cultivation costs out of their own savings, it is also imperative that the credit ceilings are adequate to cover the full cost of fertiliser

and agrochemicals for those who are solely dependent on credit. If the available institutional loan does not allow a farmer to purchase adequate inputs it may affect his repayment capacity in two ways. Firstly, insufficient institutional credit may lead to a lower than optimum input application, which through lower yields affects the productivity of the loan. Secondly, the farmer finds it necessary to seek additional funds from noninstitutional sources. Such funds carry a higher interest rate than institutional loans, therefore, production costs are increased and his net returns from cultivation lowered. Further, since noninstitutional creditors are able to bring pressure to bear on the borrower, which is beyond the power of the more distant or impersonal bank officer, there is a real danger that these more urgent demands may hamper the repayment of institutional loans.

Chapter Seven

CONCLUSIONS AND RECOMMENDATIONS

The aim of this study was to examine the agricultural credit situation in Kirindi Oya Project area. There were three major facets to this enquiry. One was to place the credit operations in the area in the general perspective of the credit situation in Sri Lanka. Another was to assess the current level of credit transactions, both institutional and noninstitutional in the area which is even now a major rice producing area in the country. The third aspect of this study was the examination of the shortcomings of the existing institutional credit system. The following conclusions and recommendations are derived from these examinations. It needs to be stressed that the recommendations have a wider applicability than the project area as the conditions and problems of agricultural credit in Kirindi Oya are much the same as those in the rest of the country. We do not claim novelty for most of these conclusions and the recommendations consequent to them. There is little doubt that if past recommendations had been acted upon the present situation regarding institutional credit would be quite different.

7.1 EXPANDING THE ROLE OF INSTITUTIONAL CREDIT IN THE PROJECT AREA

The provision of institutional credit for paddy cultivation in the project area is currently at a very low level. This situation is partly due to the fact that a very large number of potential borrowers are ineligible for institutional credit because they have defaulted on earlier cultivation loans. In order to pave the way for expansion of agricultural credit as envisaged in the Kirindi Oya Project Appraisal Report, attention needs to be directed to recovering past loans. This will enable the reintegration of defaulting farmers into the credit

scheme. Since the majority of defaulters will find it difficult to put aside monies from present harvests to repay past dues, the most effective means of loan recovery will be through monthly instalments. After more than 10 percent of the loan amount outstanding has been repaid producers should be permitted to apply for a fresh cultivation loan. The following repayment arrangements might assist the lending institution in the recovery of overdue loans.

Some defaulters are government employees receiving a regular monthly salary. Arrangements should therefore be made to deduct monthly loan instalments from their salary. For the remaining defaulters repayment must be made easier. A step in this direction will be to make arrangements for farmers to pay their instalments at an institution or office close to their homes. It is worth considering rural banks and even post offices as local collecting points for monthly instalments which can then be forwarded to the institution issuing the loan.

An additional factor which restricts the expansion of agricultural credit to a larger number of farmers in the project area, is the current practice of issuing cultivation loans from only three lending institutions located in Tissamaharama and Hambantota towns. This situation has arisen in response to the low level of loan recovery in the project area and the present emphasis on applying commercial banking criteria to agricultural lending. There are disadvantages associated with this centralization of the issue of cultivation loans. This is likely to restrict lending to those farmers within easy reach of the towns. Further, just three institutions having only a limited capacity to expand lending operations, will not be able to cope with the anticipated increase in demand for cultivation loans likely to ensue from the implementation of the Kirindi Oya Project.

The centralised issue of loans outside the farming areas further deprives the banks of close local knowledge of their clients and militates against a satisfactory level of loan supervision. From the time the issue of the loan is first requested until recovery of the loan is fully completed it is essential that the issuing

institutions maintain constant contact with the clients. Therefore, these institutions must have local offices and staff.

For the above reasons, the second important area where attention is needed is the development of a decentralised organisation to provide the basis for issuing and supervising cultivation loans under an expanded credit programme. We consider that rural banks, administered by the People's Bank, of which there are currently six in the project area (Yodakandiya, Debarawewa, Pannegamuwa, Magama, Ikkapallama and Hambantota), could provide the local framework for this organisation's agricultural lending operations. Over the last few seasons the People's Bank has maintained a very good loan recovery rate by lending direct to a small number of borrowers mainly in one part of the project area (Uduwila). It is now in a strong position to consider a gradual expansion of credit disbursements to other parts of the project area. To begin with, direct lending to producers could be implemented on a pilot basis at a couple of rural banks. Once a workable system has been developed this could gradually be adopted by all rural banks.

The Bank of Ceylon could participate in the expanded credit programme by reopening branches at the Agrarian Service Centres of Weerawila and Yodakandiya. Lending facilities would then become more accessible to farmers. The bank could also be called upon to provide similar offices at any new service centres planned under the project. These offices need not provide the full range of banking services. Instead they could specialise in agricultural credit and provide savings account facilities. Such a reduced service could be run with a small staff and might even be operated on a part time basis. For instance, each branch could have one permanent field officer and the office be opened one or two days a week with the assistance of a couple of visiting bank staff. Once demand has increased to a sufficient level, the office could be established on a full time basis staffed by two or three persons.

7.2 CREDIT EXTENSION

Many reasons have been attributed to the poor performance of institutional credit. One of the most important among these is the inability of lending institutions to maintain sufficiently close contact with individual borrowers from the time the loan is fully recovered. This contact should take the form of providing information about credit schemes and their advantages, and actually helping the farmers with the paper work involved. Subsequently the institutions must ensure that farmers get proper technical guidance and keep close tab on the progress of cultivation activities till harvesting. A highly significant finding of this study concerns the substantial numbers of first-time borrowers amongst defaulters. It is not certain whether this phenomenon is due to farmers who borrow with the express intention of defaulting. However, this indicates that a special programme of training and supervision is necessary for this group of borrowers. The maintanance of such a level of close contact will require additional staff for the credit institutions.

Having a staff of credit extension workers may not be feasible from the lending institutions point of view since the administrative cost of paddy loans is already in excess of the interest rates charged to farmers. However, such an extension service will create good opportunities for offsetting higher supervision costs by lowering default rates. Further it is likely to increase production and farm income effects through a wider and productive use of institutional credit. We therefore recommend that consideration be given to subsiding the salary and training costs of such staff out of the project budget during the initial stages. Ideally each rural bank and bank branch located at an Agrarian Service Centre should have it's own field officer permanently resident in the locality. In recruiting such personnel equal weightage should be given to those possessing local knowledge of people and of farming practices as well as to technical efficiency in banking practice and theory. Consideration should also be given to providing bicycles to these extension workers and motor cycles to the three field officers located at the central branches in Tissamaharama and Hambantota. Field staff can hardly be expected to function effectively without some means of transport.

7.3 REDUCING THE LEVEL OF DEFAULT

The main answer to the repayment problem lies in increasing the efficiency of the credit institution and increasing the farm income effects of credit. A number of shortcomings in the operation of lending institutions will be remedied if the earlier mentioned recommendations concerning the location of branches and the provision of local credit extension workers are implemented. However, apart from this there are three ways in which the bank could strengthen it's loan recovery mechanism.

Firstly, our findings indicate a certain laxity on the part of lending institutions in informing farmers that their own repayments were due. We therefore recommend that the lending institution ensures that statements reach each borrower towards the end of the cultivation season, before the harvest, informing him of the amount due and the date on which payment is to be made. At the same time, application forms for cultivation loans in the following season could be provided. This would act as a reminder to farmers that, on repayment of the outstanding cultivation loan the bank is willing to provide fresh loan facilities for the following season.

Secondly, our findings show that only a small proportion of defaulters partially repaid their loans when faced with repayment difficulties. When difficulties arise banks should be prompt in assessing the repayment capacity of the farmer and make greater efforts to recover that part of the loan which he is able to repay. Postponing the repayment of the whole loan inevitably adds to the farmers subsequent problems. Arrangements should then be made for the farmer to pay monthly instalments on the remaining portion of the loan. In genuine cases of difficulty banks should not compound the farmer's financial problems by refusing a fresh loan if at least 50 percent of the loan has been repaid and the remaining debt rescheduled.

Thirdly, the recovery of cultivation loans would certainly be accomplished with greater ease if there was a link between the provision of credit for paddy and the marketing of paddy. Presently banks have to rely solely on the credibility of the individual borrower and have

no assurance that after selling their paddy farmers will make good their debts. However, a successful tie-up between institutional lending for paddy cultivation and the marketing of paddy will be possible only when price structures permit competitive buying state concerns.

7.4 PRODUCTIVITY OF CREDIT

The necessity to ensure that credit is productively used and to increase its productivity should receive constant attention. This will lead to higher agricultural incomes and consequently better repayment capacity. The achievement of higher productivity of credit depends on two important conditions. One is the availability at farm level of the necessary technical information for productive use to be made of credit and credit linked inputs (seed, fertiliser, weedicide and pesticides). The other is the availability of an amount of loan which in combination with the borrower's own resources will be sufficient to cover the cost of cultivation and sustenance of the family during the period of cultivation. The first condition relates to the Agricultural Extension services of the Department of Agriculture, Agrarian Service Department and the proposed credit extension services of the banks. This envisages the efficient co-ordination of the activities of these different institutions. Such co-ordination is discussed in a different section. We shall here consider only the adequacy of the amount loaned.

Excessive credit is a burden to the farmer and too little credit prevents him from purchasing adequate inputs. Our findings indicate that generally speaking the standard scale of finance per hectare under the comprehensive rural credit scheme is below present costs of cultivation. Hence, there is a need to increase the standard scale of finance per hectare, particularly in the light of recent increases in fertiliser and agrochemical prices. In addition, consideration could also be given to dividing the credit ceiling for land preparation into two components, one for tractor costs and the other for labour costs associated with land preparation.

When properly utilised the effect of the regular use of borrowed funds should be a steady improvement over time in the farmers financial position. Therefore, in so far as the application of credit is successful the need for further short term credit tends to diminish. Farmers should be able gradually to better their position so as to find working capital out of the proceeds from the previous season's and savings. Then credit should be provided to effect land improvements and the purchase of productive assets such as sprayers and two wheel tractors. It is desirable that the credit ceilings per hectare for paddy cultivation should be regarded as maximum rates of finance and encouragement be given to farmers to save and to self-finance that part of their cultivation costs they are able to. It is also important that adequate emphasis in the future credit programme be given to making available longer term loans for investment in productive assets and land improvement.

7.5 CROP INSURANCE

Crop failure and insufficiency of harvest have been the reasons most often given for defaulting. Risk of crop loss arising due to different reasons plays an important role in farmers decisions relating to the use of credit as well as their resources. The perceived possibility of crop failure induces many farmers not to obtain loans for fear of falling into debt. One way of overcoming these undesirable effects of risk and uncertainty is crop insurance.

Properly managed crop insurance can act as a collateral for credit. It reduces the risk of farmers becoming indebted in the event of crop failure and can be instrumental in getting farmers to adopt improved cultivation practices. It also assists the credit programme by ensuring repayment even in the event of crop loss. However, crop insurance has not been a very successful venture in Sri Lanka. The majority of farmers in the project area do not insure their paddy crops. This is because it has been their experience or observation that in the case of crop loss or damage, the insurance payments have been very often too small and delayed, or sometimes never paid at all.

There is a need for a well organised and effective crop insurance scheme in the project area. To encourage farmers to participate in the scheme, a system for proper assessment of crop damages and prompt payment of indemnities is indispensable.

7.6 AN INTEGRATED APPROACH

The importance of the services such as Agricultural Extension, Rural Credit, Inputs Supplies, Produce Marketing, Crop Insurance etc. in agricultural development are widely recognised. Agencies for providing these services are available in the Project area. However, what is lacking is a coordinated programme of all these agencies directed towards the improvement of agriculture in the area. Such coordination has often been talked about and planned for, but in reality does not exist in a tangible and operative form in most areas of Sri Lanka, including the Kirindi Oya Project area.

It is very important to recognise that these services provided individually, in isolation of the others, diminish their effectiveness. Conversely when integrated into a single farmer service programme they complement each other and enhance the effectiveness of each service. Thus for the agricultural credit programme to be successful it is essential that the other services too are tied to the common goal of increased agricultural productivity and farm income. As an example of the nature of coordination that is necessary among these different agencies it is possible to point out that the Agricultural Extension Service must work in close collaboration with the cooperatives and other input supply organisations, and the credit organisations in recommending to the farmers the correct types, quantities and the timeliness of fertiliser and agrochemicals to be used and the amount of credit needed for these whilst informing the cooperatives of the necessity to be able to meet these requirements. Both these agencies must then coordinate with the banks to make available the necessary amounts of credit, them to stock these requirements and purchase them respectively. The very common lament of the farmers regarding the nonavailability of fertiliser and agrochemicals in time is a result of the lack of coordinations among these agencies.

The Kirindi Oya Project envisages the settlement of a large number of farmer families who would cultivate crops over thousands of hectares of land. It also envisages that 70 percent of these farmers will need credit. Success on such a vast scale can only be assured through the coordination described above. It is necessary to bear in mind that just as we recommend to the farmers to adopt a package of practices to increase their farm incomes it is essential to provide them with a package of services to enable them to obtain the increased incomes.

7.7 SETTLEMENT

The fact that many farmers in the Project area suffer from disabilities imposed by a defective agrarian structure was discussed earlier. The very large settlement component of the project provides the means of alleviating these difficulties and thus contributing towards increased productivity, incomes, and consequent well-being. The practical possibility of a general reallocation of land must be earnestly considered.

The operators of farms that are less viable on account of various physical factors like small size, poor soil conditions, and unavailability or poor irrigation can be considered for a programme of resettlement. In such a programme, these marginal farms themselves can be consolidated into larger viable units. This naturally assumes that the scheme of settlement under the Project will give preference to the people in the Project area itself. Such a programme will, withoug doubt, increase factor productivity and consequently the income and living conditions of the farmers.

7.8 AGRONOMIC PRACTICES

In the course of the investigations certain relationships between agricultural credit and agronomic practices have emerged. These are discussed below in an attempt to understand the nature and significance of these relationships and how they might impinge upon future credit policy.

In general there is a heavy preponderance in the area of new high yielding varieties over traditional ones. This is a common phenomenon in Sri Lanka as a whole. Where over 80 percent of the *asweddumised* area is cultivated under these variaties. Regarding the method of planting, broadcast sowing was much more common than transplanting. This too is common to the rest of the country, since transplanting is more labour intensive than sowing and requires a higher level of management skills.

Heavy dependence on tractors for land preparation was observed among all categories of farmers in the sample. This is an operation that is very often performed on credit for repayment in kind. It was also noted that more than a few farmers intended to buy two wheel tractors if they could save the necessary money or raise a loan. This investment is popular due to the good income these machines can generate through hiring them out.

Regarding fertiliser practices, it was noticed that farmers who obtained institutional credit and those that were self-financing used more fertiliser than the farmers who borrowed from noninstitutional sources. This compels the conclusion that the last category of farmers are constrained in their fertiliser use by a lack of sufficient finances and the high rates of interest on private borrowings. Amongst institutional borrowers those who transplanted seemed to spend almost the same amount on weedicides as those who broadcast their paddy. This is surprising since one of the notable characteristics of transplanting is that it provides for better weed control without resorting to the use of weedicides. Hence it seems that those who transplant fail to take the main advantage of this practice (transplanting) on which they have spent a considerable amount. This finding suggests that institutional credit through providing weedicides in kind may encourage an over emphasis on chemical weed control and even a tendency to use weedicides indiscriminantly. Attention should be given to a closer examination of this situation which probably calls for an extension effort designed to consolidate the advantages of transplanting.

7.9 FUTURE CREDIT NEEDS

The success of the Kirindi Oya Project is largely dependent on the project meeting its primary objective of increasing agricultural production. To achieve this objective the heavy investments in land development, irrigation and settlement must be complemented by a judicious use of yield raising inputs. The widespread use of noninstitutional credit by farmers in the sample, indicated that it is quite common for farmers not to have sufficient savings from the previous cultivation season to provide the full working capital required in the following one for the purchase of such inputs. This is both a feature of the general low level of farm incomes in relation to subsistence requirements, and to the relatively high expenditure on purchased inputs associated with paddy cultivation under modern cultivation methods. Hence, it is to be expected that large number of settler farmers in the project area will need to borrow to cover at least some proportion of their cultivation expenses.

It is desirable that insofar as possible, the credit flow to farmers in the project area should be from institutional sources. Whereas, institutional credit is characterised by interest rates of below 10 percent per year, money lenders in the project area charge interest rates in the order of 10 percent per month. Such high rates of interest would necessarily keep the absorption of credit by settler farmers at low sub optimal levels. In addition, since a large part of their income would go into debt servicing, net household incomes would only rise slowly, if at all.

If timely credit could be provided in adequate quantities and supervised in coordination with the other services of agricultural extension, crop insurance, input supplies, etc. there is a little doubt that the productivity of all factors including credit will increase. This will increase the income of farmers and enable them to repay the loans with ease. In such a situation it will be perfectly justifiable after such improvements have been implemented, to consider raising interest rates on institutional lending above the current heavily subsidised rates.

In the appraisal report it was visualised that around 70 percent of farmers in the project area will need credit. If implemented this would mean the provision of credit facilities to over 8,000 farmers. In *maha* 1979/80 all institutional credit sources in the project area provided credit for paddy cultivation to only 178 farmers. The difference between these two figures indicates the enormity of the task ahead.

In conclusion, the importance of expanding the institutional credit framework in the project area, in association with adequate supervision of borrowers and coordination with other agricultural services, cannot be over emphasised. However, as Donald (1976) has remarked,

> "the most successful method of broadening small farmers access to credit, the strongst array of incentives to lending institutions to provide such credit and the most enlightened and imaginative policies within these institutions will be of no avail if the borrowers fail to repay loans on a large scale."

It is to be hoped that this study has gone some way towards identifying initiatives that need to be taken both at the farm level and from within the lending institutions themselves, to achieve a wider, efficient and productive agricultural credit scheme with high levels of loan recovery under the Kirindi Oya Project.

Appendix One

DETAILED STATISTICS

Table 1 - Reasons for default 1967-70

	Reasons for default	Percentage of defaulters	Percentage of loans overdue
1	Crop failure	26.4	32.8
2	Low income	17.2	16.2
3	No intention to repay	12.0	14.6
4	Illness/death	8.9	8.8
5	Indifference of Co-op officials	8.8	6.3
6	Malpractices of Co-ops	7.8	5.0
7	Heavy expenditure (legal, ceremonial etc.)	2.3	2.1
8	Considered loans may be written off	2.0	1.6
9	Misuse of loans	1.9	1.7
10	Considers loans to be outright grants	1.7	1.7
11	Lack of irrigation facilities	1.5	1.2
12	Heavy capital expenditure	1.5	0.7
13	Malpractices of government officials	1.6	0.8
14	Heavy indebtedness	1.2	1.3
15	Unemployment	0.4	0.2
16	Political interference	0.4	0.3
17	Withdrawal of facilities to surrender rice ration books	0.2	-
18	Others	6.2	4.7
		100.0	100.0

Source: Central Bank of Ceylon (1972), islandwide survey of 841 defaulters.

Table 2 – Disbursement and recovery of paddy cultivation loans in Kirindi Oya Project area (*Maha* 1978/79 - *yala* 1980)

Season	Bank	No.	Amount granted	Amount defaulted	No. of hectares	Mean loan per hectare	Mean No. of hectares per borrower
Maha 1978/79	Bank of Ceylon	118	331144.75	80828.25	188.7	1755.0	1.60
	People's Bank (Tissamaharama)	49	93104.87	3899.51	70.4	1322.5	1.44
	People's Bank * (Hambantota)	82	189523.89	42463.29	104.1	1820.6	1.27
		249	613773.51	127191.05	363.2	1689.9	1.46
Yala 1979	Bank of Ceylon**	17	68707	10202	34.6	1985.8	2.04
	People's Bank (Tissamaharama)	27	74228	-	42.3	1754.9	1.57
	People's Bank (Hambantota)	26	78811.0	12377.46	41.4	1903.6	1.59
		70	221746.0	22579.46	118.3	1874.4	1.69
Maha 1979/80	Bank of Ceylon	112	438299.75	152430.5	185.8	2359.0	1.66
	People's Bank (Tissamaharama)	40	127471.57	16623.9	59.7	2135.2	1.49
	People's Bank* (Hambantota)	26	78103.21	5718	32.8	2381.2	1.26
		178	643874.53	174772.4	278.3	2313.5	1.56
Maha 1980	Bank of Ceylon	48	180850.5	50731.5	77.7	2327.6	1.62
	People's Bank*** (Tissamaharama)	23	96537.39	20.0	38.5	2507.5	1.67
	People's Bank (Hambantota)	14	45385.64	6464.75	18.5	2453.3	1.32
		85	322773.53	57216.25	134.7	2396.2	1.58

* Only those cultivation loans granted to borrowers in the project area have been included.

** There were insufficient details to include 7 cultivation loans given at the Weerawila branch at the Agrarian Service Centre.

*** Cultivation loans given to farmers in Kataragama have been included since Kataragama is not in the project area (Total credit disbursed = Rs. 5670/-, Total defaults Rs. 51,375/-).

Table 3 - Percentage amount of loans outstanding in each *Grama Sevaka* Division as at 31.12.1980

	Maha 1978/79	*Yala* 1979	*Maha* 1979/80	*Yala* 1980
Tissa North, Tissa South and Debarawewa	24.8	14.6	21.5	31.9
Ranakeliya North	32.2	0	36.8	25.0
Ranakeliya South	10.2	0	43.8	16.5
Udwila	0	0	11.2	5.2
Weerawila	2.0	15.4	0	25.4
Magama	48.8	-	78.0	100.0
Kawantissapura	0	29.7	-	-
Badagiriya	33.1	-	8.6	13.0

Source : Author's Calculations

Table 4 - Distribution of borrowers according to *Grama Sevaka* divisions and lending institutions

Grama Sevaka division	Bank*	No. of borrowers				Total	Percentage share of banks in G.S. divisions	Percentage share of G.S. division of all borrowers
		Maha 1978/79	*Yala* 1979	*Maha* 1979/80	*Yala* 1980			
Tissa North**	1	62	13	53	17	145	88.4	
Tissa South and	2	9	3	4	–	16	9.8	28.2
Debarawewa	3	3	–	–	–	3	1.8	
Rankeliya North	1	22	1	15	6	44	86.3	
Ranakeliya North	2	3	1	2	1	7	13.7	8.8
	3	–	–	–	–	0	0	
Ranakeliya South	1	27	1	32	16	76	83.5	
	2	5	1	7	2	15	16.5	15.6
	3	–	–	–	–	0	0	
Uduwila and	1	–	–	8	7	15	13.9	
Nedigamwila	2	27	21	25	20	93	86.1	18.5
	3	–	–	–	–	0	0	
Weerawela	1	1	–	1	1	3	4.9	
	2	–	1	–	–	1	1.6	10.7
	3	23	26	3	6	58	93.5	
Magama	1	4	–	3	1	8	53.3	
	2	5	–	2	–	7	46.7	2.6
	3	–	–	–	–	0	0	
Kawantissapura	1	2	2	–	–	4	100.0	
	2	–	–	–	–	0	0	0.7
	3	–	–	–	–	0	0	
Badagiriya	1	–	–	–	–	0	0	
	2	–	–	–	–	0	0	14.9
	3	56	–	23	8	87	100.0	

* 1. Bank of Ceylon (Tissamaharama 2. People's Bank (Tissamaharama) 3. People's Bank (Hambantota)

** Tissa North, Tissa South and Debarawewa are three separate G.S. divisions, but since at the time of data collection no map could be found to identify theextent of Debarawewa which falls partly in Tissa North and Tissa South, the borrowers in these three divisions were aggregated. There were similar problems in identifying Nedigamwila G.S. which is here aggregated with Uduwila G.S.

Table 5 - Distribution of borrowers according to paddy land holding size*

Hectares	*Maha* 1978/79			*Yala* 1979			*Maha* 1979/80			*Yala* 1980			Paddy farm size** in the project area 1977.	
	No. of farms	% of farms	Cumulative %	No. of farms	% of farms	Cumulative %	No. of farms	% of farms	Cumulative %	No. of farms	% of farms	Cumulative %	No. of farms	% of farms
Less than .40	1	0.4	0.4	1	1.4	1.4	0	0.0	0.0	0	0.0	0.0	542	12.0
.40 - .80	11	4.4	4.8	1	1.4	2.8	7	4.0	4.0	3	3.5	3.5	1368	31.0
.81 - 1.20	55	22.0	26.8	9	12.9	15.7	34	19.1	23.1	21	24.7	28.2		
1.21 - 1.61	90	36.0	62.8	22	31.4	47.1	62	34.8	57.9	28	32.9	61.1	2130	48.0
1.62 - 2.00	34	13.6	76.4	11	15.7	62.8	25	14.0	71.9	10	11.8	72.9		
2.01 - 2.42	35	14.0	90.4	17	24.3	87.1	29	16.1	88.2	14	16.5	89.4		
2.43 - 2.82	11	4.4	94.8	5	7.2	94.3	11	6.2	94.4	4	4.6	94.1		
2.83 - 3.23	5	2.0	96.8	-	-	94.3	2	1.1	95.5	1	1.2	95.3	361	8.0
3.24 - 3.63	2	0.8	97.6	2	2.9	97.2	2	1.1	96.6	-	-	-		
3.64 - 4.00	1	0.4	98.0	1	1.4	98.6	1	0.6	97.2	-	-	-		
Above 4.00	4	2.0	100.0	1	1.4	100.0	5	2.8	100.0	4	47	100.0	45	1.0
	249			70			178			85			4446	

* Author's calculations based on cultivation loan application forms

** Taken from Kirindi Oya Appraisal Report.

Table 6 - Scales of Finance for Paddy Cultivation (per hectare)

Irrigated lands, new and improved varieties:transplanting

Cultivation activity	*Maha* 1978/79	*Yala* 1979	*Maha* 1979/80	*Yala* 1980	*Maha* 1980/81
Land preparation	618	618	494	988	988
Seed paddy	296	148	296	148	148
Fertiliser	741	741	741	494	494
Transplanting	371	371	494	346	346
Weed control	-	-	-	247	247
Pest and disease	432	494	556	494	494
Harvesting	494	185	383	494	494
	2,952	2,557	2,964	3,211	3,211

Irrigated lands, new and improved varieties:broadcast sowing

Cultivation activity	*Maha* 1978/79	*Yala* 1979	*Maha* 1979/80	*Yala* 1980	*Maha* 1980/81
Land preparation	618	618	494	865	865
Seed paddy	296	272	296	296	296
Fertiliser	494	741	741	370	370
Transplanting	-	-	-	-	-
Weed control	371	432	494	370	370
Pest and disease	247	494	556	198	198
Harvesting	494	185	383	371	370
	2,250	2,742	2,964	2,470	2,470

Table 7 - Mean expenditure per hectare on Fertiliser and Agro-chemicals

	Institutional Credit Users			
	Transplanting		Broadcast	
	Rs.	Per-cent	Rs.	Per-cent
Number of households	12		20	
Fertiliser	592.6 (SD 268.7)	40	519.7 (SD 193.0)	43
Weedicide	338.1 (SD 262.6)	23	359.0 (SD 150.9	30
Pesticide	537.5 (SD 346.0)	37	326.5 (SD 163.9)	27

	Non-institutional Credit Users			
	Transplanting		Broadcast	
Number of households	11		69	
Fertiliser	485.4 (SD 66.7)	40	436.4 (SD 192.4)	48
Weedicide	115.1 (SD 135.4)	9	220.8 (SD 129.9)	24
Pesticide	615.0 (SD 280.1)	51	246.8 (SD 167.7)	28

	Self-financing Farmers			
	Transplanting*		Broadcast	
Number of households	4		20	
Fertiliser	543.4 (SD 190.2)	50	497.2 (SD 147.9)	48
Weedicide	147.2 (SD 87.7)	14	220.8 (SD 147.5)	21
Pesticide	392.0 (SD 121.8)	36	314.9 (SD 266.0)	31

* The small number of cultivations in this category, limit the extent to which a valid statistical comparison can be made using these mean expenditures.

Appendix Two

REGRESSION MODELS OF THE INCIDENCE OF DEFAULT

The discussion in chapter three concerning the incidence of default on paddy cultivation loans in the Kirindi Oya Project area since the introduction of the comprehensive rural credit scheme in 1973 identifies three hypotheses. Firstly, that the default rate is related to bank lending policy, secondly, that it is positively related to the number of loans granted and thirdly, that it is influenced by the rate of delinquency in previous seasons. The latter two hypotheses can be subjected to statistical verification using regression analysis and the loan statistics set out in Tsble 3.2. A simple linear regression model, in which one variable is employed to explain the fluctuation in the default rate (the dependent variable), is used to test the explanatory value of several variables. Subsequently, these are combined in a multiple linear regression model in which two explanatory variables are used to interpret the incidence of default.

The regressen results are shown in Tables 1, 2, and 3. The diferences already noted between the number of loans granted in the *yala* and *maha* seasons were felt to be of sufficient magnitude to justify a separate consideration of each, rather than combining both seasons in one time series.

For the *maha* season, the highest correlation was found when the percentage default rate was regressed on the percentage change in default rate over the two previous seasons (Table 1). This explained 87 percent of the variation in the default rate and the correlation co-efficient is statistically significant at the

2.5 percent level of significance. Regressing the percentage default rate on the number of loans granted in the *maha* season only explains 55 percent of the variation in the default rate, and the significance level of the coefficient is low. However, when the change in the number of loans granted since the previous *maha* season was used as the explanatory variable, 86 percent of the variation in the default rate was accounted for, and the significance level improved. The apriori expectations concerning the sign of the coefficient are fulfilled, since in all cases the coefficient is positive, thereby indicating that an increase in the explanatory variable is associated with a concomitant increase in the value of the dependent variable (the percentage of default).

When the percentage default rate in the *yala* season is regressed against various explanatory variables, the resulting regression equations are less significant (Table 2). As might be expected from the smaller number of loans granted in the *yala* season relative to loan disbursement in the *maha*, the number of loans granted in *yala* appears to have little influence on the default rate in that season. But, when the explanatory variable used is the change in the number of loans granted since the previous *yala* season, the correlation coefficient is higher and statistically significant.

The high significance of this explanatory variable, may partly be accounted for by the fact that, as a measure of change, it assimilates the influence of bank lending policy. (Changes in bank lending policy have in the past usually preceded any substantial increase or decrease in the number of loans granted). The preceding *maha* season default rate explains 52 percent of the variation in the rate for *yala* and the estimates of the coefficient on the explanatory variables - the percentage default rate in the preceding *maha* season and the change in the number of borrowers since the previous *yala* season are combined in a two variable linear regression model, they account for a higher percentage of the total variation in the default rate than they did separately (Table 3).

Seventy five percent of the total variation in the *yala* season default rate over the period 1973-1980 is accounted for by regressing the precentage default rate on the change in the number of borrowers since the previous *yala* season and the percentage default rate of the preceding *maha*. The size of the coefficient estimate on the explanatory variables suggest that it is the preceding *maha* season's default rate which has greatest influence on the rate in *yala* season. This probably arises due to the influence earlier seasons default rates have in forming farmers attitudes towards repayment. If a credit programme is experiencing high levels of default and little action is being taken against defaulters, an awareness of this weakness is liable to encourage other borrowers to default. The process can also operate in reverse.

The results of the two variable models constructed for *maha* season loan statistics are less easy to interpret. Three regression models combining various explanatory variables are given in Table 3. The best fit and highest R^2 is found when the percentage default rate is regressed against the number of loans granted and the change in the default rate over the past two seasons. These two variables together account for 89 percent of the variation in the default rate. Although the coefficient estimates have the expected signs, the registered standard errors are quite large. The regressors in model 2 explain around 75 percent of the variation in default rate, but the coefficient estimate on one explanatory variable registered quite a large standard error. There is probably some degree of intercorrelation among the explanatory variables due to the inter-dependence of the level of default and the number of borrowers over time. This may account for the large standard errors and makes it difficult to establish the influence of each regressor on the dependent variable separately. Also, since there are generally larger numbers of borrowers in *maha* than in *yala*, it is possible that the default

rate is open to a greater variety of other influences in the former season.[1]

In essence, the models constructed here using a time series of loan statistics from the Kirindi Oya Project area, have captured the broad pattern of change in the default rate over time. By lending support to the hypothesis that both the change in the number of borrowers since the previous season and the preceding season's default rate, influence rate of default in the current season, these regression models usefully indicate two factors to which the default rate has been sensitive to in the past. Although the analysis only uses loan statistics from the project area, the similarity between the broad pattern of change in the disbursement and recovery of cultivation credit in this area on the one hand and for the whole island on the other, suggests that the above findings could be of more wider value.

1 When high R^2 and low standard errors are not found contemporaneously in a particular model as in the case with model 2 and model 3, then care has to be taken in interpreting and accepting the results. There is no general agreement among econometricians as to which of the statistical criteria is more important, a high R^2 or low standard errors. A high R^2 is generally a more important criteria when the model is to be used for forecasting while the standard errors acquire a greater importance when the purpose of the model is explanatory.

Table 1 - Simple linear regression models of the incidence of default in *maha* seasons in the Kirindi Oya Project area, 1973 - 1980

Form of the regression equation : $Y = b_o + b_1 X$ Where Y = Percentage default rate in the *maha* season

X = Explanatory variable

b_o and b_1 are coefficient estimates

X (Explanatory variables)	No.	b_o	b_1	b_1	r^2	T. value correlation co-efficient	Significance level of correlation coefficient	Standard error of b_1	Significance level of b_1
Number of loans granted	7	25.17	.015	.55	.30	1.47	15%	.01	10%
Change in number of loans granted over previous *maha* season	6	42.44	.016	.865	.75	3.45	1%	.004	1%
Previous *yala* season default rate	7	23.83	.421	.598	.36	1.67	10%	.11	1%
Percentage change in default rate over two pervious seasons	6	41.86	.688	.878	.77	3.7	2.5%	.165	1%

Table 2 - Simple linear regression models of the incidence of default in the *yala* season in the Kirindi Oya Project area 1973 - 1980

Form of the regression equation : $Y = b_o + b_1 X$ Where Y = Percentage default rate in the *yala* season

X = Explanatory variable
and b_o and b_1 are the coefficient estimates

X (Explanatory variables)	No.	b_o	b_1	r	r^2	T. value correlation coefficient	Significance level of coefficient correlation	Standard error or b_1	Significance level of b_1
Number of loans granted	7	30.02	.0009	.084	.007	not	significant	not	significant
Change in number of loans granted over the previous *yala* season	6	45.0	.090	.706	.50	2.0	10%	.45	10%
Previous *maha* season default rate	7	6.84	.7	.522	.27	1.86	10%	.261	2.5%
Percentage change in the default rate over the 2 previous season	7	22.65	.04	.03	.0009	not	significant	not	significant

Table 3 - Two variable regression models of the incidence of default in Kirindi Oya Project area (1973-1980)

Regression model

$$Y = b_0 + b_1X_1 + b_2 X_2$$

Where Y = percentage default rate and X_1 and X_2 are explanatory variables.

Maha season models

(1) $Y = 19.1 + .01X_1 + .32X_2$
(9.38)(.011) (.275)
t = 2.04 .943 1.15
R^2 = .48

X_1 = Number of loans granted
2 = Previous *yala* seasons default rate.

(2) $Y = 42.1 + .015X_1 + .037X_2$
(10.28)(.006) (.247)
t = 4 (2.35) (.15)
R^2 = .75

X_1 = Change in number of loans granted since previous *maha* season
X_2 = Previous *yala* seasons default rate

(3) $Y = 31.9 .013X_1 + .423X_2$
(9.98)(.013) (.354)
t = 3.19 1.07 1.2
R^2 = .894

X_1 = Number of loans granted
X_2 = Change indefault rate over previous two seasons

Yala season model

$Y = 18.4 + .09X_1 + .69X_2$
(16.5) (.036) (.388)
t = 1.11 2.59 1.78
R^2 = .755

X_1 = Change in number of loans granted since previous *yala* season
X_2 = Percentage default rate since previous *maha* season

Appendix Three

MEDIUM TERM CREDIT, SAVINGS AND LENDING

In addition to eliciting information relevant to the nonrepayment of cultivation loans, the agricultural credit survey collected details concerning medium term loans, savings and loans producers made to one another. The limited scope of the information collected does not allow a detailed inclusion of these aspects in the present study. However, it may be of value to those implementing the Kirindi Oya Project and to researchers interested in these topics to present a summary of the survey findings. These are outlined below.[1]

MEDIUM TERM CREDIT

Medium term credit is here defined as loans for which the repayment period extends over more than one cultivation season. Only twelve farmers in the sample had taken medium term loans in the past. These were predominantly for 2 and 4 wheel tractor purchases. The percentage of farmers taking such loans was highest amongst the "non-borrowers" group (15.6 percent). However, quite a substantial number of farmers (36.1 percent defaulters, 76 percent nondefaulters, 37 percent nonborrowers), indicated investments that they would like to undertake if they could save the necessary money or raise a medium term loan. Details of the types of investments that farmers wanted to make are illustrated in Table 1 below, and provide a guideline to the types of medium term loans that could be made more widely available under a future credit programme in the project area.

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1 The farmer groups - defaulters, nondefaulters and nonborrowers, refer to a farm households status as regards paddy cultivation loans from institutional sources over the period *maha* 1978/79 to *yala* 1980 inclusive (see Chapter 5).

It is interesting to note that more than 50 percent of farmers desired loans for the purchase of two wheel tractors.

Table 1 - Demand for medium term credit, classified by purpose of loan

	Number of defaulters	Number of non defaulters	Number of non borrowers
Four wheel tractors	1	-	-
Two wheel tractors	16	20	3
Sprayer	1	3	1
Water pump	1	2	2
Levelling	3	4	2
Paddy mill	-	1	2
Taking new land into cultivation	1	-	1
Purchase of livestock	-	-	1
Purchase of land	-	2	2
Miscellaneous land improvements	3	3	-
	26(36.1%)	35(76%)	12(37.5%)

SAVINGS

Farmers were asked about savings accounts that they held with banks or other institutions. With the exception of five farm households in the nonborrower category, all the farmers in the sample held at least one savings account. The main purpose of farmers savings accounts was to facilitiate loan transactions. Although some farmers mentioned the use of savings in emergencies and saving for their old age, only a small number appeared to be saving for any agricultural purposes.

With the exception of burial societies, membership of informal savings or credit associations was not common amongst farmers in the sample. Around two thirds of the sample were members of one or more burial societies. Only two farmers belonged to a rotating savings association (called *seetu*). Such savings associations seemed not to be a widespread phenomenon in the project area.

LENDING ACTIVITIES

A few farmers in the sample extended credit to other farmers during *maha* 1980/81 cultivation season. Credit was extended in the form of interest free loans, cash loans with interest and cultivation services. The number of farmers making such loans is shown in Table 2 below.

Table 2 - Private lending activities

Type of lender	No. of farmers lending*	Number of loans		
		Interest free	With interest	Cultivation services
Defaulter	4	1	3	1
Nondefaulters	12	5	3	6
Nonborrower	6	1	2	3

* Some farmers make loans of more than one type.

Nondefaulters had the highest incidence of interest free loans, though almost all of such loans were small amounts below Rs. 300/-. In each farmer group there were one or two farmers lending money with interest, but not on a large scale. Two nondefaulters appeared to be lending amounts above the loan amount they had received under the comprehensive rural credit scheme, and one defaulter appeared to be lending an amount in excess of his defaulted loan. It was common for those farmers with tractors to undertake land preparation on credit for other farmers.

Although it might be expected that farmers have underestimated the full extent of their lending activities, there is little in these findings to justify the claim that farmers in receipt of institutional credit are relending their institutional loans at higher interest rates on a large scale.

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