

levels n_2 (50 kg. N per hectare) and n_3 (66 kg. N per hectare) gave better results than n_1 (33 kg. per hectare) in 1963-64 while in 1964-65. n_1 gave better yield than n_2 and n_3 . Among the different methods, however, m_1 (pellet application) gave better yield than other methods in both the years.

Conclusion: (1) The application of ammonium sulphate increases rice yield. (2) The optimum dose of nitrogen for the Manimuthar project area was found to be 50 kg. N per hectare for *samba* season and 33 kg. per hectare for summer season. (3) Broadcasting half the quantity at planting and the remaining half a month after planting was found to be the best for *samba* season while application of the entire quantity in the form of pellets near the root zone at a depth of two inches three weeks after planting and broadcasting the entire quantity at the time of last ploughing and incorporating into the soil were found to be equally good for summer season.

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Flow of Credit for Agricultural Development

by

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Introduction: Agriculture is the main economic sector providing the homestead, employment and income to the majority of the population in India. The main problem confronting such a vital sector is according to Leduc (1963), how to enable a peasant agricultural economy to finance the investments required for the desired development and to raise the working capital necessary for the annual crop cycle. Cited (Anon, 1904), by The Committee on Co-operation in Madras (1940) "One of the most difficult problems with which the small agriculturist is everywhere confronted is to obtain the money which is necessary for his operations at a reasonable rate

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of interest. The normal source of credit namely, the ordinary commercial banks, is closed to him partly owing to the nature and length of operations involved in agriculture and partly due to the unstable rate of yield on capital investments. The conditions of uncertainty, dilatory and unpunctual habit in the matter of repayments by farmers *etc.*, have all contributed to the closure of general flow of credit from banks". The bulk of the agricultural credit has, therefore, been from money-lenders but at usurious rates. Painted in dark colours their behaviour has been greedy, unscrupulous and fraudulent. Hence it becomes inevitable for the State to play an active role in the field of agricultural credit as an unselfish lender. In order to evaluate the benefits accruing to the farmers as a result of different kinds of financial aid provided by the Government for agriculture, an investigation was undertaken in the Coimbatore district. The data related to the problem of credit and role of different agencies supplying the credit. The present paper is based on the data relating to Southern parts of Coimbatore district.

Methodology: Five villages were selected in each taluk of the Coimbatore district covering 45 villages in all. Ten holdings from each village were chosen for enquiry. The selection of the village was based on the maximum number of beneficiaries of Government loan in the villages of each taluk. Data in respect of all the 450 holdings were collected through a comprehensive proforma. Out of the 450 holdings surveyed, data in respect of 40 holdings pertaining to the Coimbatore South were analysed and the results are discussed.

Results and Discussion: Survey of the problem of agricultural credit in the sample area indicated that out of 40 beneficiaries of Government aid, 20 persons borrowed money from private money-lenders at an interest rate of 6 to 12 per cent, 17 persons at 13 to 24 per cent and three persons at 25 to 36 per cent. Thus almost all beneficiaries had to borrow from private agencies either because the Government aid was not significant or it was very difficult to get it, in time. The enquiry also showed that the influential section of the community was able to get loans in time and in sufficient quantities while the ordinary poor, illiterate and non-influential peasants were not able to get the benefits of various public aid. Regarding the implementation of the full finance scheme, the peasants were reluctant to adopt it due to lack of co-operation, village faction and consequent non-viability of most of the societies. Too late and too little credit and the evil consequences of favouritism may be the causes for the non-significant role of public aid in the field of agricultural credit.

The predominance of professional as well as agriculturist money-lenders as the chief agencies of agricultural credit has found an important

place in the All India Rural Credit Survey (1954). An analysis of the percentage contribution by different agencies to the total capital requirement in the sample area in Southern part of Coimbatore district has shown that 36.4 per cent was contributed by money lenders. The percentage contribution by other agencies is given below :

<i>Credit agency</i>	<i>Percentage contribution</i>
Money - lenders	36.4
Own resource	23.4
Co-operatives	17.3
Government	4.4
Others	18.5

A further analysis of the contribution of different credit agencies to the total borrowings of the farmer has shown the following :

Credit agency	Percentage contribution of credit agencies to the total borrowings		Deviation from All India Rural Credit Survey findings
	As per Rural Credit Survey	As per Sample Survey for Coimbatore South	
Money-lenders	69.7	47.4	— 22.3
Government	3.3	5.7	+ 2.4
Co-operatives	3.1	22.5	+ 19.4
Others	23.9	24.4	+ 0.5

The percentage contribution of money-lenders to the total borrowings of the farmers in the Coimbatore South was, according to the present survey, only 47.4 per cent as against 69.7 per cent in the Rural Credit Survey (1954). Although the present sample survey for Coimbatore South has shown a lesser percentage of contribution by money lenders by about 22.3 per cent when compared to All India average of 69.7 per cent, it is also evident that the dominance of money-lender over other agencies is still a predominant factor. The reduction in percentage contribution of money lenders from the amount of contribution during Rural Credit Survey Period may probably be due to legislature measures taken by Government to regulate private credit as well as social sanctions imposed against usurious money-lenders by the society in course of its social reform. Further as a result of the increased activity of co-operative sector in the field of agricultural credit the sample

survey indicated an increase by about 19.4 per cent over the percentage contribution during the Rural Credit Survey (1954.), whereas in case of public aid through Government agency, a meagre increase of 2.4 per cent only has been recorded. It was inferred from the enquiry that owing to the steps taken by the co-operative sector to tap the rural savings the percentage contribution of co-operative agency to the total borrowings of the farmers has considerably increased. Consequently, the direct participation by the Government in extending credit for agricultural development has not increased relatively. Thus it is evident that the role of co-operative agency in Coimbatore South is dominant over the role of Government agency in the flow of credit for agricultural development. Joshi (1963) has found on record of the full finance committee 1962 that 28.9 per cent of the credit needs in Madras State were met by credit societies.

In order to evaluate the response of different agencies in fulfilling the capital requirements of the farmers correlation among the supply agency variables to the capital requirement were worked out.

Correlation co-efficients among the supply agency variables to the capital requirement (for log values)

	Y Total capital requirement	X ₁ Response by money-lenders	X ₂ Co-operative Society	X ₃ Government
Y	1.000	0.703**	0.454**	0.415*
X ₁		1.000	0.338*	0.578**
X ₂			1.000	0.242
X ₃				1.000

** = Significant at 0.01 level

* = Significant at 0.05 level

The factors - money-lender, Co-operative Society and Government agency - all had significant correlation to the dependent factor, capital requirement. While x_1 and x_2 were significant at one per cent level, x_1 and x_3 were significant at five per cent level. Money-lender had the highest correlation of 0.703 followed by Co-operative Society and Government agency. The factor x_1 was inter-correlated to x_2 and x_3 , *i. e.*, the response of money-lender was influenced or affected by the response from Co-operative Society and Government agency. Since these factors were inter-correlated, it was not possible to estimate the response of individual factors in combination with other factors as well as the cumulative effect. Hence in

order to estimate the effect of response from the factors x_1 , x_2 and x_3 , an estimating function of the conventional Cobb - Douglas model is fitted. The function fitted to the data was as follows :

$$Y = 5.437 x_1^{0.61111} x_2^{0.21258} x_3^{0.01585}$$

The elasticity co-efficient and the co-efficient of determination for the above equation is given below :

b_1	b_2	b_3	b_i	R^2
0.6114**	0.21258	0.01585	0.83957	0.53350

** Significant at 0.01 level.

The equation indicated that the response by the money lender alone was significant to the fulfilment of capital requirement of the farmer, *i. e.*, an increase in response by one per cent to the call of credit by money lender will result in an increase in fulfilment of capital requirement by 0.61 per cent through that agency. The Co-operative as well as the Government agencies though apparently had shown to have response in the field of credit, the co-efficient of elasticity was not significant and their response was almost negligible. The response of money lender was also on a diminishing scale. The cumulative effect of response of all these agencies was towards a contribution of 0.83 per cent at a diminishing scale. These three agencies contributed only 53 per cent of the capital needs of the farmers. The remaining 47 per cent of the capital needs of the farmers were met by other agencies like relatives *etc.*

Conclusion : It may be conclusively proved from the above estimation, that the contribution by the Government agency as well as the Co-operatives was not at all significant when considering the total capital needs of the farmer. Thus, inspite of the increasing activity in the field of agricultural credit by the Co-operatives the real fact tends to be the dominant role of private agencies in the provision of necessary credit to the farmers. For years to come their rule in the field of agricultural credit cannot be wiped out or no measure could be taken exclusively to eradicate the private agency from the field of agricultural credit without taking adequate steps to provide necessary machinery both to create and manage the source of credit. The full finance scheme is a step in this line, and Joshi (1963) reported that this scheme has provided 51.4 per cent of the total credit needs in its area of operation. The organisational, financial and legal problems that may arise with the implementation of this scheme may have to be solved in course of time by trial and error method only.

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Correlation of Soil Tests for Nitrogen with Response to Added Nitrogen in Madras Soils

by

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Introduction: Detailed correlation studies are in progress in our State to improve, if possible, the soil test recommendations adopted at present in our State. With phosphorus as the nutrient, Venkatachalam, Subramaniam and Kamalam (1963) had indicated the need to study the soils of Madras State grouped according to probable clay mineral type in order to get reliable correlations. This paper deals with correlation with reference to nitrogen in the soils of Madras State.

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