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RESEARCH ARTICLE

IMPACT OF INSTITUTIONAL CREDIT ON THE FARM ECONOMY IN KARNATAKA, INDIA

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ABSTRACT

The present study was conducted to examine the effects of institutional credit on cost, returns and profitability in the Tumkur district of Karnataka State during 2008-09. A sample of 120 respondents was selected in which sixty were the borrowers and sixty were non-borrowers the same area. Sample t-test was used to compare the production and income of beneficiaries. The analysis revealed that the income of beneficiary farm category was higher than that of non-beneficiaries. With credit for paddy, ragi, groundnut, pegionpea, arecanut and coconut was more compared to the non-beneficiaries and which showed a significant difference in yields except coconut yield. The cost and return structure of major crops, viz, paddy and ragi revealed that the total cost of cultivation was to Rs.12045.11 and 11715.84 per acre respectively on borrower farms compared to Rs. 9991.4 and 10056.44 per acre on non-borrowers farms. The net returns derived from paddy and groundnut were Rs. 16,124.33 and 14,809.88 (on borrower farms) and Rs.11, 132.22 and 8,771.34 (on non-borrower farms), respectively. Farm credit has positive impact on the per acre yield of crops under study and also on farmers income.

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INTRODUCTION

Smaller holdings and poor capital investment ability of farmers in India keep Indian agriculture in poor economic conditions. With the advent of green revolution and commercialisation of agriculture, the capital needs in agriculture have increased substantially .Therefore, there is a greater need for institutional credit as vital input to support agriculture production and allied activities for promoting modern methods of production and for sustained farm returns. Majority of our farmers are subsistence farmers who are not in a position to use high quality seeds, sufficient fertilizers and improved farm implements due to the lack of finances. Lack of finance is one of the main reasons for low per acre productivity in our agriculture. Enhancing agricultural productivity therefore depends largely on the availability of finance to the farmers in their respective areas. Every modern business is operated mostly on or borrowed capital. Similarly, farming also requires capital. The need for farm credit in increasing production and effective utilization of farm resources is quite clear. Farming requires credit mainly in the form of improved seeds, fertilizer and modern implements.

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Institutional credit was promoted in India through several policy mechanisms by establishing network of institutions such as Cooperatives, Commercial banks and RRBs. through NABARD (1982) was established at the national level to look after the credit needs of agriculture. Diversification and commercialization in agriculture have lead to expansion in the flow of credit to agriculture. This has brought in its wake a change from traditional agriculture is to commercial one. In all, institutional credit played a very important role in the development and transformation of the agrarian economy. The success of Green Revolution in Indian agriculture to a large extent laid on institutional credit support in terms of expansion in inputs like fertilizers, irrigation, private sector capital formation, etc. Therefore, considering the importance of by credit, this study attempts to assess the current perceptible trends in institutional credit to agriculture and to investigate its impact on the farm economy.

Keeping in view the above facts, the specific objectives of the present study are as follows:

1. To examine the nature and extent of loans financed by the financing institutions, and
2. To assess the impact of institutional credit on the level of income, costs, returns and profitability of borrowers a vis-a vis non-borrowers.

MATERIALS AND METHODS

Tumkur district of Karnataka was selected purposively for the present study. The details of methodology used for the selection of different sampling units, viz. Taluks, villages and farmers was given below. Out of ten taluks, Tumkur district of three taluks namely Tumkur, Gubbi and Pavagada were selected for detailed survey work based on the highest credit flow to these taluks. The study related for the agricultural year 2008-09 for achieving the specific objectives of the study, primary data were collected from the sample farmers by personal interview method with the help of well structured, elaborate and pre-tested schedule. A sample of 60 borrowers who avail institutional credit and an equal number of non-borrowers who did not availed any institutional credit were selected randomly from six villages of three selected taluks of Tumkur district. In addition to simple tabular analysis, the t-test was carried out to study the impact of credit on agricultural production.

RESULTS AND DISCUSSION

Agriculture credit is one of the most crucial inputs in all agricultural development programmes. For a long time, the major source of agricultural credit was the private money-lenders. The credit provided by them was inadequate and highly expensive and exploitative. After independence, a multi-agency approach consisting of co-operatives, commercial banks and regional rural banks known as institutional credit has been adopted to provide cheaper and adequate credit to the farmers. The credit was made available to the borrower by co-operatives, commercial banks and regional rural banks. The nature and extent of loan financed by the financing institutions are presented in Table 1.

The termwise and farm sizewise borrowing pattern implied that of the total number of marginal farmers, 45.46 per cent and 54.54 per cent of them found to have borrowed both the short-term (Rs. 18,400.00) and medium-term (Rs.30,833.33) credit, respectively to enhance the productivity and profitability of their farm business enterprises. Among the small farmers, 71.88 per cent, 25.00 per cent and 3.12 per cent borrowed short-term, medium-term and long-term credit, respectively.

The size of the credit provided also increased with increased term of credit and the corresponding amount of loans availed were Rs.28, 913.04, Rs.65, 000.00 and Rs. 2,00,000.00, respectively. Similarly 41.18 per cent of the large farmers availed both short-term (Rs. 28,571.43) and medium-term (Rs. 44,285.71) credit while, only 17.64 per cent of them availed long-term (Rs.2, 50,000.00) credit. Thus, it could be inferred from of the study that the volume of credit needed by the farmers increased with increase in holding size. (Table 2) clearly depicts that cereals occupied the major share in area among non-borrowers (57.10 per cent) while the total area covered under pulses and oilseeds together was more with 26.03 per cent on borrower farms as against only 17.50 per cent in case of non-borrowers.

The area covered under horticultural and plantation crops were also relatively more and accounted for 32.25 per cent and 25.40 per cent in case of borrowers and non-borrowers, respectively. These results showed that borrowers choose to have more area under high-value commercial and oilseed crops as compared to non-borrowers. The cropping intensity was also found to be relatively higher on beneficiary farms (157.99 per cent) than on non-beneficiary farms (148.52 per cent).

Table 1. Termwise and Farm sizewise Borrowing Pattern of Credit among Beneficiary Farmers

(Amount in Rs.)

Farm size group	Short-term credit		Medium-term credit		Long-term credit		Overall	
	Number	loan Amount (in Rs)	Number	loan Amount (in Rs)	Number	loan Amount (in Rs)	Number	loan Amount (in Rs)
Marginal farmers (Below 2.5 acre)	5 (45.46)	18400.00	6 (54.54)	30833	-	-	11 (100.00)	25181.80
Small farmers (2.5-5.00 acre)	23 (71.86)	28913.04	8 (25.00)	65000	1 (3.12)	200000.00	32 (100.00)	43281.30
Large farmers (Above 5.00 acre)	7 (41.18)	28571.43	7 (41.18)	44285	3 (17.64)	250000.00	17 (100.00)	74117.60
Total	35 (58.33)	27342.86	21 (35.00)	48333	4 (6.67)	237500.00	60 (100.00)	48700.00

Figures in parentheses indicate percentages to the total

Table 2. Cropping pattern adopted by Sample Farmers in the Study Area

Sl. No.	Particulars	Borrowers		Non-Borrowers	
		Average Area (in acre)	percentage	Average Area (in acre)	percentage
I	Cereals				
	Ragi	1.04	23.92	1.08	32.30
	Paddy	0.78	17.80	0.83	24.80
	Sub Total	1.82	41.72	1.91	57.10
II	Pulses and oilseeds				
	Ground nut	0.92	21.05	0.49	14.8
	Bengal gram	0.08	1.72	0.05	1.50
	Pigeon pea	0.14	3.25	0.04	1.30
	Sub Total	1.14	26.03	0.58	17.50
III	Horticulture/plantation crops				
	Areca nut	0.47	10.72	0.40	12.0
	Coconut	0.54	12.44	0.38	11.3
	Banana	0.13	2.87	0.03	1.00
	Mango	0.13	2.87	0.00	0.00
	Onion	0.08	1.72	0.01	0.31
	Tomato	0.07	1.63	0.03	0.91
	Sub Total	1.42	32.25	0.85	25.42
	Total cropped area	4.48	100.00	3.49	100.0
	Cropping intensity (%)		157.99		148.52%
		%			

Note: Percentages expressed are to the total cropped area

Impact of Credit on Household Income

The income pattern of sample respondents presented in Table 3 reveals that the average annual income of borrowers was highest (Rs.83,518.40) from horticulture crops (43.60 per cent) followed by that from agriculture at Rs. 66,901.60 (34.92 per cent) and from livestock at Rs.41,146.90 (21.48 per cent) per farm. Lower incomes per farm was noticed further all sources among the non-borrowers. The corresponding annual income from horticulture crops was only Rs.56,504.20 (39.07 per cent) followed by agriculture at Rs. 56,325.17 (38.94 per cent) and livestock income at Rs.31,799.30 (21.99 per cent) among the non-borrowers.

The average income per farm among borrowers was more than among non-borrowers. There existed a significant difference in incomes at five per cent probability level in the case of income from horticulture, livestock and the overall income between the borrowers and non-borrowers. Thus, it was evident from the results that credit significantly influenced the productive capacity of farm resources among borrowers and thereby contributing towards higher incomes from all sources.

of arecanut was highest at 13.46 qt/ac in the case of borrowers and that of non borrowers was 9.52 qt/ac difference in yield being 29.27 per cent. The per acre mean yield of coconuts was also higher in the case of borrowers (19,309.52 nuts/acre) compared to non-borrowers (10,495.16 nuts/acre) the difference in yield being 45.65 per cent.

Costs, Returns and Profitability

The costs and returns of important crops grown in the study area for all farmers. The major crops grown in the study area were paddy and ground nut for borrower and non-borrower farms the details are given in Tables 5 and 6. The per acre costs and returns for borrowers and non-borrowers were worked out to substantiate the influence of institutional credit borrowed on the profitability of farming The major crops grown, viz, paddy and groundnut by the sample farmers were considered for this analysis and the results of the said analysis are presented below. The per acre cost of cultivation amounted to Rs. 12045.11 and 11715.84 on borrower farms compared to Rs. 9991.4 and 10056.44 on non-borrowers farms respectively.

Table 3. Annual income of Sample Respondents households from different Sources

(Rs/family)

S. No.	Sources	Borrower		Non-Borrower		Percentage increase in income	t-value
		Rupees	Percentage	Rupees	Percentage		
1	Agriculture	66901.60	34.92	56325.17	38.94	15.81	1.44
2	Livestock	41146.90	21.48	31799.30	21.99	22.72	2.18*
3	Horticulture/plantation	83518.40	43.60	56504.20	39.07	32.35	2.00*
	Overall	191566.90	100.00	144628.70	100.00	24.50	2.35*

* Significant at 5 per cent

Table 4. Productivity Levels of Major Crops among Sample Farmers

S. No.	Particulars	Borrower	Non-Borrower	Percentage difference in the yield	t-value
		Mean yield	Mean yield		
I	Cereals				
	Paddy	22.93	19.64	14.35	2.63*
	Ragi	7.82	6.8 6	12.28	2.59*
II	Pulses and oilseeds				
	Groundnut	11.73	7.94	32.31	4.83**
	Pigeon pea	5.85	4.19	28.38	4.05**
III	Horticulture/plantation crops				
	Arecanut	13.46	9.52	29.27	2.22*
	Coconut (No. of nuts/acre)	19309.52	10495.16	45.65	1.78

Note: Figures in parentheses indicate percentage increase in the yields of borrowers over non-borrowers

** Significant at 1 per cent

* Significant at 5 per cent

Impact of Credit on Productivity

It is evident from the Table 4 that among the cereals, mean yield of paddy, ragi per acre was highest among borrowers compared to non-borrowers; the percentage difference in the yield was 14.35 per cent and 12.28 per cent respectively which was significant at 5 per cent probability level Among the pulses and oilseeds, the corresponding mean yields of both groundnut and pigeonpea were significantly higher in the case of borrowers (11.73 qt/ac and 5.85 qt/ac, respectively) as against 7.94 qt/ac and 4.19 qt/ac, respectively in the case of non-borrowers. The percentage difference in the yield of both crops was 32.31 per cent and 28.38 per cent, respectively and the yields of both crops were significant at one per cent probability level. Among the commercial crops, yield the level

Higher cost of cultivation of borrower farms was mainly due to higher investment on seed, manure and fertilizer as well as human labour. Variable costs accounted for higher percentage of total in the case of borrowers (74.36 and 75.78 per cent) than in case of non-borrowers (69.41 and 72.26 per cent) in both the crops respectively, this implies the additional expenditure made by borrowers on various modern inputs that directly influence the productivity of crops Thus, the credit forms a vital input to raise production and productivity of crops. The overall yields of paddy and groundnut were 21.58 and 10.94 qt/ac on borrowers' farms and 16.24 and 7.85 qt/ac on non-borrowers' farms respectively. The net returns derived from for paddy and groundnut were Rs. 16,124.33 and Rs.14,809.88 (on borrower farms) and Rs. Rs.11,132.22 and 8,771.34 (on non-borrower farms), respectively. The study

Table 5. Cost and Returns structure in Paddy Production among Sample Farmers

(Rs./acre)

S. No	Particulars	Borrowers		Non-borrowers	
		Cost	Percentage	Cost	Percentage
I.	Variable costs				
1	Seeds	366.3	3.04	241.6	2.42
2	Organic manure	1258.3	10.45	652	6.53
3	Fertilizers	2152.03	17.87	1563.71	15.65
4	Human labour	2025.59	16.82	1737.89	17.39
5	Bullock labour	1898.7	15.76	1748.62	17.50
6	Plant protection chemicals	669.4	5.56	492.01	4.92
7	Interest on working capital	585.92	4.86	499.51	5.00
8	Total Variable Cost (I)	8956.24	74.36	6935.34	69.41
II.	Fixed costs				
1	Rental value of land	2300	19.09	2300	23.02
2	Land revenue	25	0.21	25	0.25
3	Depreciation	435.6	3.62	406.3	4.07
4	Interest on fixed Capital	328.27	2.73	324.76	3.25
	Total Fixed Cost (II)	3088.87	25.64	3056.06	30.59
	Total cost of cultivation (I + II)	12045.11	100.00	9991.4	100.00
III.	Returns				
	Yield (qt/acre)	21.58		16.24	
	Gross returns (Rs/acre)	28,169.44		21,123.62	
	Cost of cultivation (Rs/acre)	12045.11		9991.4	
	Net returns (Rs/acre)	16,124.33		11,132.22	
	B:C ratio	2.34		2.11	

Table 6. Cost and Returns in Groundnut Production among Sample Farmers

(Rs. /acre)

S.No	Particulars	Borrowers		Non-borrowers	
		Amount (Rs)	Percentage	Amount (Rs)	Percentage
I.	Variable costs				
1	Seeds	2700.01	23.05	2250.21	22.38
2	Organic manure	1874.24	16.00	1580.92	15.72
3	Fertilizers	526.41	4.49	322.6	3.21
4	Human labour	2241.25	19.13	1860.2	18.50
5	Bullock labour	846.92	7.23	700.35	6.96
6	Plant protection chemicals	116.23	0.99	82.42	0.82
7	Interest on working capital	573.22	4.89	470	4.67
8	Total Variable Costs (I)	8878.28	75.78	7266.7	72.26
II.	Fixed costs				
1	Rental value of land	2100	17.92	2100	20.88
2	Land revenue	25	0.21	25	0.25
3	Depreciation	411.22	3.51	368.52	3.66
4	Interest on fixed capital	301.34	2.57	296.22	2.95
5	Total Fixed Cost (II)	2837.56	24.22	2789.74	27.74
	Total cost of cultivation (I + II)	11715.84	100.00	10056.44	100.00
III.	Returns				
	Yield (qt/acre)	10.94		7.85	
	Gross returns (Rs./acre)	26,525.72		18,827.78	
	Cost of cultivation (Rs./acre)	11715.84		10056.44	
	Net returns (Rs./acre)	14,809.88		8,771.34	
	B:C ratio	2.26		1.87	

clearly, revealed that per acre gross returns and net returns on beneficiary farms were higher than on non-beneficiary farms as a result of use of institutional credit in the production of crops.

Conclusion and policy Implications

The study on costs, returns, profitability as well as the income impact through t-test analysis clearly demonstrated that of agricultural credit has positive impact on the per acre yield of crops under study and also on their income. Thus the institution farm credit has resulted in improving the economy of the borrower farmers.

The agricultural performance depends on many factors; agricultural credit is one of them. The performance of institutional credit to agriculture and the determinants of institutional agricultural credit use at households' level have been analyzed. The study has shown that the institutional credit to the agriculture has been increasing for the past four decades. However, different patterns in the growth of agricultural credit have been observed during different sub-periods.

The structure and sources of credit have witnessed a clear shift and commercial banks have emerged as the major source of institutional credit to agriculture in the recent years. Further,

the portfolio of institutional credit to agriculture has also changed and the share of investment credit in total credit has declined over time. The declining share of investment credit may constrain the agricultural sector to realize its full potential. The average incomes per farm among borrowers were more than among non-borrowers. There existed a significant difference in incomes at five per cent probability level in the case of income from horticulture, livestock and the overall income between the borrowers and non-borrowers. Thus, it was evident from the results that the credit significantly influenced in increasing the productive capacity of the farms of borrowers, thereby contributing towards higher incomes from all sources.

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