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Impact of institutional finance on farmers economy in North Konkan region of Maharashtra, India

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ABSTRACT

Credit enables farmers to use various input to the recommended levels and thereby increase agricultural production through increased employment opportunities. The present study was undertaken to know the impact of institutional credit on cost, returns on profitability in the north Konkan region of Maharashtra state. A sample of 120 borrowers and 120 non-barrowers was selected randomly from twelve villages of four selected tahsils of Thane and Raigad district of North Konkan region. The analysis revealed that cropping intensity on beneficiary farm category was higher than non-beneficiaries. Area under irrigation was also more (1.06 ha.) on beneficiary farms than non-beneficiaries (0.39 ha.). The borrower farmers availed loan to the extent of Rs.10076.18 per farm (Rs.5503 per ha.). Per farm amount of loan increased with increase in the size of holding. Regarding size groupwise disbursement it was observed that maximum crop loan was taken by large size group (Rs.6075/-) followed by medium (Rs.5440/-) and small group (Rs.2450/-). Similar trend was observed for other purpose of loan . The per farm income and profit on beneficiary farms was higher than non-beneficiary farms. The per farm gross return from beneficiary farm was Rs.99288 as against Rs.32889 from non-beneficiary farm. This indicated that gross income on beneficiary farm was about three times higher than non-beneficiary farms. The farm business income, which represents the profit for direct cost for beneficiary farmers, was four times more than that of non-beneficiary farms. The output-input ratio at cost on beneficiary and non-beneficiary farm was 1.10 and 0.95 respectively. This showed that crop production was profitable on beneficiary farms. The effect of short-term loan in production process was found significant on all size groups. The value of regression coefficient indicated that with increase of one rupee short-term loan, gross income of small farmers increased by Rs. 5.03, medium farmers by Rs.1.25 and large farmer by Rs.2.93. The results have clearly demonstrated that there is positive impact of agricultural credit on per hectare yield of different crops. Thus the flow of farm credit has resulted in improving the economy of the borrower farmers.

Key words: Finance, Cost, Returns, Profit and Farmer economy.

INTRODUCTION

Agricultural finance is one of the most vital resource for agricultural sector. With the technological breakthrough in Indian agriculture, the farmers are inclined to use more and more capital to meet the cash requirements for purchasing different farm inputs. Inadequate and inefficient use of capital is the major cause of low productivity on our farms. In order to sustain and accelerate the technological change in agriculture, the availability of adequate amount of credit and its use in proper direction is of prime importance.

MATERIALS AND METHODS

The study was conducted in North Konkan region of Maharashtra state. A sample of 120 farmers (borrowers) who availed institutional credit for last three years and equal number of sample farmers (non-borrowers) who did not availed any credit were selected randomly from 12 villages of four selected tahsil of Thane and Raigad districts of North Konkan region. The selected farmers were classified on the basis of land holding namely small, medium and large group in borrower and non-borrower groups. In addition to simple tabular analysis, The multiple regression analysis was carried out to study the impact of credit on agricultural production.

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RESULTS AND DISCUSSION

Utilization of loan:

The credit was made available to the borrower by Co-operatives, Commercial banks and Land Development Banks. The pattern of utilization of loan is presented in Table 1.

It is observed from the Table 1 that at the overall level, out of total amount of loan disbursed by Co-operative Banks (50.14 %) highest proportion of loan (36.98 per cent) was availed for crop production followed by purchase of livestock with 6.59 per cent and for purchase of pump sets for irrigation with 3.31 per cent amount. Digging of well and installation of irrigation system together accounted for 3.26 per cent of total outlay. Regarding size groupwise disbursement, it was revealed that maximum crop loan was taken up by large size group

Table 1 : Pattern of utilization of credit. (Average of year 1999 to 2001) (Amount in Rs.)

S. No.	Purpose	Small	Medium	Large	Overall
A.	CO-OPERATIVES				
1.	Crop production	2450.15	5440.50	6075.30	3725.64
	(crop loan)	(48.51)	(37.81)	(24.59)	(36.98)
2.	Purchase of livestock	506.30	699.70	1340.20	663.72
		(10.02)	(4.87)	(5.43)	(6.59)
3.	Digging of wells	-	540.35	-	148.59
			(3.75)		(1.47)
4.	Purchase of pump sets	303.95	405.10	319.80	333.75
	(for irrigation)	(6.02)	(2.81)	(1.29)	(3.31)
5.	Installation of irrigation system	-	415.25	530.20	180.47
			(2.88)	(2.15)	(1.79)
	Sub-Total :	3260.40	7500.90	8265.50	5052.17
		(64.55)	(52.12)	(33.46)	(50.14)
B.	COMMERCIAL BANKS				
1.	Crop production	-	610.30	1760.20	387.86
	(crop loan)		(4.24)	(7.12)	(3.85)
2.	Purchase of livestock	349.99	1580.60	1340.60	812.23
		(6.93)	(10.98)	(5.44)	(8.06)
3.	Digging of wells	504.20	870.40	349.10	585.52
		(9.98)	(6.05)	(1.41)	(5.81)
4.	Purchase of pump sets	385.80	409.40	550.70	412.90
	(for irrigation)	(7.64)	(2.84)	(2.23)	(4.10)
5.	Installation of irrigation system	380.15	2430.30	3637.17	1351.07
		(7.53)	(16.89)	(14.72)	(13.41)
6.	Purchase of power tiller	-	-	6133.33	766.67
				(24.83)	(7.61)
7.	Installation of gobar gas plant	170.32	-	-	102.19
		(3.37)			(1.01)
	Sub-Total :	1790.46	5901.00	13771.10	4418.44
		(35.45)	(41.00)	(55.75)	(43.85)
C.	LAND DEVELOPMENT BANK				
1.	Development and reclamation	-	990.00	2666.60	605.57
	of land		(6..88)	(10.79)	(6.01)
	Total (per farm)	5050.86	14391.90	24703.20	10076.18
		(100.00)	(100.00)	(100.00)	(100.00)
	Per hectare	8146.55	4568.25	4660.98	5303.25

(Figures in the parentheses are percentages to total)

farmers (Rs. 6075.30) followed by medium (Rs. 5440.50) and small size group farmers (Rs.2450.15). Similar trend was observed for the other purposes of loan. In respect of commercial banks, installation of irrigation system was the main purpose, which accounted for 13.41 per cent of the total loan.

Medium size and large size group farmers have availed loan from LDBs for the purpose of development and reclamation of land. The study thus indicated that the per farm amount of loan availed was increased from Rs.5050.86 in small group to Rs.24703 in large group with an overall average of Rs.10076.18.

Costs, Returns and Profitability:

The costs, returns and profit for the farm as a whole for beneficiary and non-beneficiary groups were worked out to substitute influence of borrowed credit on it. The major crops grown by the sample farmers were considered for this analysis and the results of the said analysis are presented in Table 2.

Table 2 : Cost returns and profit on borrower and non-borrower farms. (Rs. Per farm)

S. No.	Particulars	Borrowers	Non-borrowers
1.	Gross cropped area (ha.)	2.59	1.47
2.	Gross cropped area under major crops (ha.)	2.16	1.08
3.	Gross returns (aggregate)	118882.87	42412.86
		(45900.66)	(28852.29)
4.	Gross returns from major crops	99287.87	32888.69
		(45966.61)	(30452.49)
5.	Cost 'A'	51357.82	20723.58
		(23776.77)	(19188.50)
6.	Cost 'B'	76607.34	28801.62
		(35466.36)	(26668.17)
7.	Cost 'C'	89964.68	34705.56
		(41650.31)	(32134.78)
8.	Farm business income	47930.05	12165.11
		(22189.84)	(11263.99)
9.	Familay labour income	22680.53	4087.07
		(10500.25)	(3784.32)
10.	Net income	9323.19	-1816.87
		(4316.29)	(-1682.29)
11.	Output – Input ratio at :		
	i) Cost 'A'	1.93	1.59
	ii) Cost 'B'	1.30	1.14
	iii) Cost 'C'	1.10	0.95

(Figures in parenthesis are per hectare values)

It is observed from Table 2. that at the overall level, per farm gross return for beneficiary farm was Rs.99287.87 as against Rs. 32888.69 for non-beneficiary farm. Thus, gross income on beneficiary farms was about three times higher than non-beneficiary farms. At the overall level, cost A, cost B and cost C on beneficiary farm was Rs. 51357.82, Rs. 76607.34 and Rs. 89964.68, respectively. On non-beneficiary farms, cost A, cost B and cost C at overall level were Rs. 20723.58, Rs. 28801.62 and Rs. 34705.56, respectively. Thus, per farm expenditure incurred by beneficiary farmers on crop production was substantially higher than non-beneficiary farmers. The farm business income which represented the profit over direct costs for beneficiary farms was Rs. 47930.05 which was about four times more than that of non-beneficiary farms. The family labour income was more than four times in borrower group (Rs.47930.05) over non-borrower group. This indicated better employment opportunities on the farm itself in borrowers group. The net income i.e. profit at cost 'C' on beneficiary farm for the farm as a whole was Rs. 9323.19, while for non-beneficiary farm, it was Rs.(-) 1816.87. The output – input ratio at cost on beneficiary and non-beneficiary farm was 1.10 and 0.95, respectively. This showed that crop production was profitable on beneficiary farms.

The per hectare returns were worked out to compare the performance of beneficiary and non-beneficiary farms. As revealed from Table 2, the per hectare gross returns on beneficiary farm were Rs. 45966.61 as against Rs. 30452.49 on non-beneficiary farms. Per hectare net income were Rs. 4316.29 on beneficiary farm as against the loss of Rs. 1816.87 on non-beneficiary farms. The study thus revealed that per farm income and profit on beneficiary farm were higher as compared with non-beneficiary farms.

Impact of credit on profitability

From foregoing analysis, the impact of credit with respect to cost, returns and profitability on sample is assessed by comparison with borrowers and non-borrowers. The efforts are made here to find out the impact of credit on farm business income (at cost 'A') as well as on net income (at cost-'C'). The installment of loan (S.T. + M.T. + L.T. loans) to be repaid by borrowers

Table 3 : Impact of credit on profitability

Size Group	Borrowers							Non-borrowers				
	Total returns	Cost 'A'	Cost 'C' (Total cost)	Returns at cost 'A'(FBI) 2-3	Returns at cost 'C'(net returns) (2-4)	Installment of loan to be repaid (S.T.+M.T. +L5-7.T)	Difference Between FBI and loan installment	Difference Between Net returns and loan installment 6-7	Total returns	Cost 'A'	Cost 'C' (Total cost)	Returns at cost 'A'(FBI) (10-11)	Returns at cost 'C'(net returns) (10-12)
1.Small													
i)Per farm	34172.29	14541.26	27670.50	19531.03	6501.79	3166.00	16365.03	3335.79	11702.21	6457.02	11358.23	5245.19	343.98
ii)Per hectare	46178.77	19785.49	37392.56	26393.28	8786.21	4278.38	2214.90	4507.83	30795.29	16992.18	29890.07	13803.11	905.22
2.Medium													
i)Per farm	163450.75	88367.89	151919.73	75082.86	11531.02	7912.00	67170.86	3619.02	69291.67	40211.80	65706.17	19089.87	(-)6414.50
ii)Per hectare	44295.60	23947.94	41170.66	20347.66	3124.94	2144.17	18203.49	980.77	28643.32	19425.99	31742.11	9217.33	(-)3048.79
3.Large													
i)Per farm	270684.23	145339.10	252675.45	124845.13	18008.78	10760.00	114085.13	7248.78	90126.42	55045.60	93092.27	35080.82	(-)2965.85
ii)Per hectare	48771.93	26277.32	45527.10	22494.61	3244.83	1938.74	20555.87	1306.09	33755.21	20616.33	34866.01	13133.88	(-)1110.80
4.Overall													
i) Per farm	96106.77	46373.11	83743.39	49733.66	12363.38	5420.00	44313.66	6943.38	30930.66	19015.91	32168.19	11914.75	(-)1237.53
ii)Per hectare	44493.87	21469.03	38770.09	23024.84	5723.78	2509.26	20515.58	3214.52	28907.16	17771.86	30063.72	11135.30	(-)1156.56

was also worked out and is presented in Table 3.

Farm as a whole analysis was done in terms of borrowers and non-borrower farmers to find out the actual impact of credit on net returns and is presented in Table 3. This analysis was done to see how much amount of net income was left over in the hands of farmers after repaying the instalment of loan. The farm business income and net income was worked out by deducting cost 'A' and cost 'C' from total returns. The installment of loan was worked out by taking full amount of short term loan in a year in addition to medium term and long term loan by apportioning its period of repayment. After deducting the loan installment from net returns whatever the balance amount or net profit remains that can be utilise by the borrowers in the capital formation or in any other productive assets on the farm and this is actually the impact of credit on crop production.

From above analysis, it is observed that per hectare net returns on borrowers farms was Rs. 8786, Rs. 3125, Rs. 3245 and Rs. 5724 on small, medium, large farms and at overall level, respectively. Regarding non-borrowers, it was observed that per hectare net returns on small farms was Rs. 905. Negative net returns of Rs. (-)3049/-, Rs.(-)1111/- and Rs. (-)1157/- were observed on medium, large and at overall group. The low or negative net returns on non-borrowers farms was due to low yields of different crops as compared with borrowers farmers.

After repayment of loan, the per hectare net profit worked out was Rs. 4508/-, Rs.981/-, Rs.1306/- and Rs.3215/- on small, medium, large and overall groups, respectively. The per hectare farm business income left over after repaying the loan installment was Rs. 22115/- on small farm, Rs. 18203/- on medium farm, Rs. 20556/- on large farms, while at overall level, it was worked out to Rs. 20516. The per farm analysis of the impact of credit is shown in the same table. This clearly reveled that borrowing was beneficial to the farmers and there was a positive impact of credit on crop production.

The impact of credit on farm income was assessed through multiple regression analysis. The assessment of the impact of different

Table 4 : Results of regression analysis showing impact of credit on farm income.

S. No.	Variables	Size groups			
		Small	Medium	Large	Overall
1.	Working members in family (X_1)	1418.1700*	901.8947	8560.49	1133.85
		(775.18)	(13167.80)	(12306.31)	(1922.30)
2.	Gross cropped area (X_2)	19586.45***	37472.19***	50245.74***	42130.24***
		(5835.55)	(2783.07)	(13590.29)	(1321.85)
3.	Short term loan amount (X_3)	5.0280***	1.2529***	2.9270*	0.5342**
		(1.1148)	(0.3569)	(1.4514)	(0.2473)
4.	Term loan amount (X_4)	0.2011^{NS}	0.3259^{NS}	4.2581^{NS}	0.0486^{NS}
		(0.8294)	(0.4336)	(3.0188)	(0.3880)
5.	Intercept	3039.24	13441.98	1796.04	223.6207
		(1772.78)	(13167.80)	(89195.43)	(5333.65)
6.	R^2	0.97	0.90	0.76	0.92

*** Significant at 1% level of significance ** Significant at 5% level of significance

* Significant at 10% level of significance

variables especially the quantum of loan on farm income of borrowers, the regression analysis was carried out and the results are presented in Table 4.

It is observed from the Table 4, that the regression coefficients of working members of small farmers have shown significant effect on farm income. The regression coefficient (1418.17) indicated that with increase of one working member, the gross income was increased by Rs. 1418/-. The effect of working member was found non-significant in other groups.

The gross cropped area was found highly significant at 1 per cent level of significance in all the size groups. The regression coefficients of gross cropped area for small, medium and large farms indicated that with increase in one hectare of gross cropped area, the farm income increased by Rs. 19,586, Rs. 37,472 and Rs. 50,246 on small, medium and large size groups, respectively.

Similarly, the effect of short-term loan in production process was also significant on all the size groups. The values of regression coefficients indicated that with increase of one rupee S.T. loan, gross income of small farmers increased by Rs. 5.03 of medium farmers by Rs. 1.25 and large farmers by Rs. 2.93. This indicated that small farmers still having potential to increase their income by availing short term loans.

The effect of term loans (M.T. and L.T.) was found to be non-significant on all size groups. This was because of small quantum of these loans. This indicated that farmers in the study area gave priority for short duration crops and hence, for short-term loans. The effect of all the variables included in the analysis was highly significant as indicated by R^2 values as 97 per cent in small, 90 per cent in medium and 76 per cent in large group with 92 per cent at overall level (Table 4). The effect of term loan (medium term and long term loan) was found non-significant. This may be because of the spread of these loans over number of years i.e. long period of time. This effect could not be measured in a span of one year.

CONCLUSION

The study on cost, returns, profitability and impact through multiple regression analysis clearly demonstrated that there has been positive impact of agricultural credit on the per hectare yield of the crop under study. Thus the flow of farm credit has resulted in improving the economy of the borrower farmers.

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