

Rural banking system through credit and its effect on agricultural productivity in nagrota bagwan block in Kangra district of himachal pradesh

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ABSTRACT: Present study was confined to Kangra district of Himachal Pradesh. In this study Nagrota Bagwan block was selected randomly. A list of farmers, who had borrowed agricultural loan, was obtained from different banks and a sample of 50 beneficiaries was obtained from this block. The existing agricultural credit system in the study area showed that, Punjab National Bank, Himachal Gramin Bank, The Kangra Central Co-operative Bank and State Bank of Patiala, State Bank of India were operating. Overall % accessibility of sampled beneficiaries to the credit indicated that about 90 % of the loan applied was sanctioned by the institutions. Borrowing through Kisan Credit Card was the highest. State Bank of Patiala was the most important source of borrowings. Cost of borrowing was also found to be low. After availing the financial assistance, the investment on the farm machinery and implements increased substantially followed by investment on livestock. The overall change in investment was calculated to be about 28 %. Paddy and potato had the highest shift in area. The area under paddy increased by 30.76 % and 23.52 % in case of potato. Area under maize (HYV) increased by 10 % while in case of vegetable the increase was 14.28 %. Area under maize (local) and wheat decreased by 35.71 % and 14.63 % respectively. Maximum increase in fertilizer application was observed in potato (22.39 %), followed by maize (21.62 %) and cucumber (18 %). The increase in productivity of cucumber was found to be highest (26.70 %), followed by paddy (15.01 %), potato (15.33 %), and vegetables (12.76 %). Productivity of maize (10 %) increased but in less proportion as compared to other crops. There was substantial increase in milk yield of Cross Bred Cow. The average annual income per household increased by about 10 %. The study recommends that there is a need for more awareness about lending among farmers from the institutional sources. Further, loans through Kisan Credit Card were quite high thus efforts should be made so that maximum farmers have Kisan Credit Card and can avail the bank loans without any difficulty.

Keywords: Bank, Agriculture, Income, Farmers, Loans

1. Introduction

Agriculture is the backbone of any developing economy like India, as majority of the population depends directly or indirectly on it. People get their food from agriculture in various forms, i.e., cereals, fruits, vegetables etc. Many large and small industries depend on agriculture for raw material. Foreign

trade also depends upon agriculture. Thus, the key issue is that the development of agriculture is a must for the growth of the Indian economy.

Credit is a sub-component of the total investment made in agriculture. The investment comes from a basket of sources – ranging from non-monetized investments such as the farmer's labor, saved seeds, use of local resources for pest control and fertilizers; and monetized investment that includes both the savings of the agriculturist and borrowings. Borrowings could in fact be from multiple sources in the formal and informal space.

The rural credit delivery system faces serious challenges with the rising cost of credit, tight liquidity, poor loan recovery due to write off of agricultural over dues and slowing of credit off-take. System has been concentrating either on poverty alleviation or financial inclusion. Various institutions have been set up at times without dwelling deep into causes for failure of earlier institutions. However, the levels of financial exclusion remain high in both urban and rural areas for the poor. The All India Debt and Institutional Survey Report 2002, states that 13.4 % of rural households are indebted to institutional sources, while another 15.5 % are indebted to non-institutional sources. The need of the hour is to ensure financial inclusion to all eligible for bank account and provide financial services as required in rural areas (Anonymous, 2009).

The rural credit system has evolved over the last six decades. During this course, the system witnessed many reforms mainly as the outcome of recommendations of various committees and expert groups appointed by the government of India and the RBI from time to time. The agricultural credit system received its first and significant policy direction from All India Rural Committee (AIRC) which recognized the existence of cooperative structure and recommended state financial support for its strengthening. The other major development in agricultural credit from the supply side were the establishment of RRBs in the year 1975, establishment of NABARD in the year 1982 and the ongoing financial sector reforms since 1992 to supplement institutional mechanism. Agricultural credit is disbursed through a multi-agency network consisting of Cooperatives, Commercial Banks and Regional Rural Banks (RRBs) etc.

The rural credit and saving facilities enable farmers to invest in land improvement or agriculture technologies such as high yielding seeds, fertilizers, plant protection measures etc. Thus, the households with improved access to credit are better able to adopt technology to enhance the farm income and employment.

The present study was thus, conducted with the following objectives.

2. Objective of the study: The paper is attempted with the objective to examine the impact of credit on farm productivity in study area.

3. Review of Literature:

Mishra (2005) studied impact of agricultural credit in his study 'Impact of institutional finance on farm income and productivity: A case study of Orissa'. The results revealed that among all the institutional agencies the role of co-operatives was quite commendable having the share of 39.53 % followed by commercial banks (19.83 %) and Regional Rural Banks with 6.91 %. Study also revealed that 20.38 % of

the short term credit and 20.55 % of long term credit were diverted for unproductive purpose. Also the increased in yield of borrowing farms was due to use of credit financed inputs.

Sharma *et al.* (2007) studied credit accessibility in their study 'Access to credit- A study of hills farms in Himachal Pradesh.' The study showed that credit was very low in absolute terms which might be because the farmers had small holdings and thus borrowings for machinery etc. were avoided. Among non-institutional sources, moneylenders had no role to play. Contribution of friends/ relatives was found to be significant. Among agricultural loan, crop production loan for seed, fertilizer etc. was found to be important. Among social factors, formal education was found to be important in enhancing the probability of being a borrower. Also farm size and non-farm income played a vital role in borrowing behaviour.

Ray (2007) studied credit in his study 'Economics of change in cropping pattern in relation to credit: A Micro level study in West Bengal'. In the study both primary and secondary data related to area under crop, credit etc. were used. Analysis of data revealed that the credit availability from both institutional and non-institutional sources made a significant contribution on the change in the cropping pattern. But the impact of credit availability on cropping pattern had been more significant in case of smaller size of land holding. Again the profitability was also higher in the case of small and marginal farmers. The change in cropping pattern made a significant impact on the employment generation.

4. Research Methodology

Present study was confined to Kangra district of Himachal Pradesh. Out of 12 developmental blocks in the district one block viz. Nagrota Bagwan was selected randomly. Punjab National Bank, State Bank of Patiala, Himachal Gramin Bank and The Kangra Central Co-operative Bank were considered as there was only one branch of each bank in the selected block. The other banks operating in this block did not provide the list of beneficiaries. A list of farmers, who had borrowed agricultural loan, was obtained from these sources. As per the information provided by these banks, fifty beneficiaries were taken. Both primary and secondary data were collected for the present investigation. The primary data was collected through set of 50questionnaire's and secondary data was collected through published books and reports. Secondary information related to total agricultural loan advances of 2011-12 and for the period of 2010-12, loan outstanding, over dues, total amount repaid, etc., were collected from different bank branches. The primary data as per the requirement of the objectives of the study has been analyzed with appropriate methodology.

5. Results/Interpretation of data

5.1 Impact of Agricultural Credit

It is very important to analyze the magnitude and extent of benefits realized by the beneficiaries after availing financial assistance from organized institutions. The benefits realized by the beneficiaries after availing the agricultural credit have been assessed.

5.2 Farm Investment

The transformation of agriculture from subsistence to commercialization requires investment on the farm along with use of modern inputs. For this, financial institutes play a vital role in meeting the credit requirements of the farming community. Keeping this background in view, the investment pattern by the sampled beneficiaries on the farm has been assessed and presented in Table 1.1

**Table 1.1 Impact on agricultural credit on investment pattern by sampled beneficiaries
(Rs/beneficiary/annum)**

Sr.No	Particulars	Before	After	% change after availing credit
1.	Farm buildings	62,291	64,129	2.95
2.	Farm machinery and implements	6,603	24,861	276.51
3.	Livestock	11,212	14,082	25.59
Total		80,106	1,03,072	28.66

Source: Field Survey, 2013-14

An examination of the table reveals that after availing the financial assistance, the investment on the farm machinery and implements increased substantially (276.51 %) followed by investment on livestock (25.59 %). The change in farm building was found to be minimum (2.95 %). It can also be seen from the table that the overall change in investment pattern was calculated to be about 28 %.

5.3 Cropping Pattern

With the availability of credit, the constraint on certain inputs like seed, fertilizer, pesticides, hired labour etc is likely to be minimized. This helps in the change in cropping pattern to maximize the income. The impact of agricultural credit on cropping pattern of the sampled beneficiaries was examined and is presented in Table 1.2.

Table 1.2 Impact of agricultural credit on area under different crops grown by the sampled beneficiaries

Sr.No	Particulars	Before	After	% change after availing credit
1)	Paddy	0.13	0.17	30.76
2)	Maize			
	i) Local	0.14	0.09	-35.71
	ii) HYV	0.10	0.11	10.00
3)	Wheat	0.41	0.35	-14.63
4)	Cucumber	0.03	0.03	-----
5)	Potato	0.17	0.21	23.52
6)	Others*	0.21	0.24	14.28

*including cabbage, cauliflower, frenchbean, pea, tomato, brinjal

Source: Field Survey, 2013-14

The table were shows that paddy and potato were the main crops which had the highest shift in area. The area under paddy increased by almost 30 % and in case of potato the increase was about 23 %. It can also be seen that area under maize (HYV) increased by 10 % while in case of vegetable the increase was 14.28 %. The table further shows that area under maize (local) in *kharif* season decreased by almost 35 %, while the fall in area under wheat was observed to the tune of 14.63 % in *rabi* season.

5.4 Input Use pattern

The impact of agricultural credit on the input use pattern by the sampled beneficiaries has been presented in Table 1.3.

**Table 1.3 Impact of agricultural credit on input use pattern by the sampled beneficiaries
Fertilizers use (Kg/ha) in terms of NPK**

Sr.No	Particulars	Before	After	% change after availing credit
1)	Paddy	42	50	19.05
2)	Maize	37	45	21.62
3)	Wheat	38	42	10.53
4)	Cucumber	39	46	17.95
5)	Potato	67	82	22.39
6)	Others*	29	33	13.97
	Plant protection measures (Rs/ha)	310	726	134.19

*including cabbage, cauliflower, frenchbean, pea, tomato, brinjal

Source: Field Survey, 2013-14

The table reveals that maximum increase in the use of fertilizer was observed in potato (22.39 %), followed by maize (21.62 %), paddy (19.05 %), cucumber (17.95 %), and wheat (10.53 %). The increase in vegetables was estimated to be about 14 % (Fig. 3.4). It is important to note that use of plant protection measures also increased by 134.19 % after availing the agricultural credit.

5.5 Input Use in Dairy

The impact of agricultural credit on input use in dairy by the sampled beneficiaries has been presented in Table 1.4

Table 1.4 Impact of agricultural credit on input use in diary by the sampled beneficiaries

Sr.No	Input use	Before	After	% change after availing credit
1)	Green fodder(kg/day)			
	i) CBC	25	28	12
	ii) Local cow	20	24	20
	iii) Bullock	35	35	---
2)	Dry fodder(kg/day)			
	i) CBC	15	20	33
	ii) Local cow	15	15	---
	iii) Bullock	20	20	---

CBC-Cross Bred Cow

It can be seen from the table that input use for Cross Bred Cow increased by 12 % in green fodder and 33 % in dry fodder. Additional quantity of green fodder was fed to local cow. However there was no change for dry fodder. No change was observed for bullocks in any one of the inputs.

5.6 Productivities

The higher use of inputs led to increase in productivities of different crops on the farm of the sampled beneficiaries. As evident from the Table 4.31 the increase in productivity of cucumber was found to be highest (26.70 %), followed by paddy (15.01 %), potato (15.33 %), and vegetables (12.76 %). Productivity of crops like maize (10 %) and wheat (1.27 %), also increased but in less proportion as compared to these crops. There was substantial increase in milk yield of Cross Bred Cow.

Table 1.5 Impact of agricultural credit on productivity of different enterprises

Sr.No	Particulars	Before	After	% change after availing credit
1)	Crops(Kg/ha)			
	i) Paddy	1,239	1,425	15.01
	ii) Maize			
	a) Local	2,233	2,371	6.18
	b) HYV	3,607	3,766	4.40
	iii) Wheat	1,492	1,551	1.27
	iv) Cucumber	5,936	6,846	26.70
	v) Potato	4,538	5,750	15.33
	vi) Others*	3,550	4,003	12.76
2)	Diary(Its/day)			
	i) CBC	4.42	6.55	48.19
	ii) Local cow	3.33	3.88	16.51

*including cabbage, cauliflower, frenchbean, pea, tomato, brinjal

Source: Field Survey, 2013-14

5.7 Farm Income

The short term objective of the farmer is to increase farm income. With the help of farm credit the immediate benefit to be examined is the change in household income. The household income before and after availing the credit was studied and is presented in Table 1.6.

Table 1.6 Purpose-wise impact of agricultural credit on farm income of the sampled beneficiaries

Sr. No	Purpose	Before	After	% change after availing credit
1)	Crops	15,882	19,398	22.13
2)	Dairy	21,368	25,297	18.38
3)	Business/Shop	1,380	1,380	---
4)	Service/Pension	1,04,640	1,04,640	---
5)	Hiring out of machinery	1,145	8,050	803.00
	Total	1,44,415	1,58,765	9.93

Source: Field Survey, 2013-14

An examination of the table reveals that the average annual income per household increased by about 10 %. Hiring out of machinery led to substantial increase in income. In case of crops the increase was to the tune of 22 % as against 18 % in dairy. Since the credit was for agricultural purposes thus, there was no change in income for business as well as service.

5.8 Factor Affecting Loan Borrowed: Results of Regression Analysis

To quantify different factors affecting the amount of the loan borrowed, linear regression analysis was applied. The loan borrowed (short term) was treated as a dependent variable since the observations on medium and long term loan were very low. The independent variables considered included age of head of the family, educational qualification of the head of the family, farm income, non-farm income, and dummy for caste. The results of regression analysis are presented in Table 1.7a.

Table 1.7a Factors affecting loan borrowed: Results of regression analysis
Variables Coefficients Standard error

Variables	Coefficients	Standard error
Constant	-33245.40	15344.23
Age of the head of the family	722.07*	278.15
Education of head of the family	4753.57*	2351.35
Farm income	0.43*	0.18
Non-farm Income	0.02	0.06
Dummy for caste (SC/ST 1, otherwise zero)	6287.49	4728.62
Dummy for caste OBC 1, otherwise zero	-4540.10	5193.03
Adjusted R ²	0.42	
F value	7.23	
N	38	

Figure marked by *denote significance level at 0.05 level of probability

Results showed that the age, education of head of the family and farm income had positive and significant effect on credit. Adjusted R² was estimated to be 0.42. It is important to note that caste had no role in the borrowings behavior of the sampled households.

There are number of factors which affect the farm income. The crop wise analysis has been done separately but here the interest was to examine the effect of farm credit on farm income. Thus, the regression analysis was conducted between farm income and credit borrowed. The results are shown in Table 1.7b

Table 1.7b Factor affecting loan borrowed: Results of regression analysis

Variables	Coefficients	Standard error
Constant	33754.32	3045.12
Credit borrowed	0.34*	0.08
r ²	0.18*	
t-value	17.26	
N	37	

Figure marked by *denote significance level at 0.05 level of probability.

It can be seen that regression coefficient of credit borrowed was positive and statistically significant. One rupee increase in credit would lead to 0.34 rupee increase in farm income. The value of r² was low but significant.

6. Major findings

1. The overall change in investment was calculated to be about 28 %.
2. Paddy and potato were the main crops which had the highest shift in area. The area under paddy increased by 30.76 % and 23.52 % in case of potato. Area under maize (HYV) increased by 10 % while in case of vegetable the increase was 14.28 %. Area under maize (local) and wheat decreased by 35.71 % and 14.63 % respectively
3. Maximum increase in fertilizer application was observed in potato (22.39 %), followed by maize (21.62 %) and cucumber (18 %).
4. The increase in productivity of cucumber was found to be highest (26.70 %), followed by paddy (15.01 %), potato (15.33 %), and vegetables (12.76 %). Productivity of maize (10 %) and wheat (1.27 %), increased but in less proportion as compared to other crops. There was substantial increase in milk yield of Cross Bred Cow.
5. The average annual income per household increased by about 10 %.
6. Regression analysis showed that the age of head of the family and farm income had positive and significant effect on credit. Adjusted R² was estimated to be 0.42. It is important to note that caste had no role in the borrowings behaviour of the sampled households. Also in regression analysis between farm income and credit borrowed it was found that regression coefficient of credit borrowed was positive and significant

7. REFERENCES

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