

# Impact and constraints faced by the borrowers of cooperative bank finance in Nagaland

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## Abstract

The present study was undertaken on sixty borrowers of cooperative bank during 2009 to 2012 in Dimapur district of Nagaland to examine the impact of loan on borrowers a resource use efficiency on pooled data as well as on different farm size group were fitted, which was found to be significant. As per the client satisfaction index 48.33% were medium satisfied, followed by 23.67% as low satisfied and remaining 25.00% as highly satisfied with the extension services of banks available presently. It was further observed that on rank based quotient the foremost constraints was of amount of loan, followed by preparation of DPR, lack of technical guidance from bank, time of disbursement, subsidiary / rebate on loan, disbursement of loan, credit facilities and miscellaneous, form issued by the bank, knowledge about type of loan, bank interest rate, filling up of loan forms, repayment period etc at the lower scale.

**Keywords:** DPR, CSI, CDPF, RBQ, MVP.

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Agriculture is the mainstay of Indian economy not only in terms of contribution to the gross domestic product but also the people dependent upon it. A high level growth of agriculture is essential both for achieving the objective of food security at macro and micro levels and also to alleviate poverty in India. Approximately 15.7% (at current price) of the GDP is contributed by agriculture and allied sector, with about 52.1% of the country's population dependent on this sector and accounts for about 12% share of the country's exports (Anonymous, 2010).

A co-operative bank is a financial institution, which belongs to its members, who were the members for their mutual benefits. A co-operative bank preferred the members from same locality or community by professional with having the common interest. It generally provide their members with a wide range of banking and financial services like credit and deposits, handling of banking accounts as per needs etc; which may be differ due to working procedure and organizational set-up, goals. It is basically

governed by the banking regulations having an common interest. The system of banking functioning may differ from country to country, which is under the jurisdiction of state government by following the three tier system for debit, credit and handling the bank account too. Basically the cooperative banks were govern by the guideline or instructional given by the banking regulation in the interest of consumers, which may varies from region to region and country to country of banking sector (Kanchu, 2012).

The role of banks in rural upliftment and the effectiveness of banks as a tool for socio-economic, and over all development of the rural people consists of a broad spectrum. The success or failures of any enterprises depends to a large extend on availability of finance.

## Research Methodology

This study is based on the data collected from marginal, small and medium borrowers selected

from two blocks of Dimapur district of Nagaland. Multi-stage random sampling design was used for the selection of sample. In the first stage, namely Dimapur district was selected purposively being highest borrowers with operative banks in the State. In the second stage, out of four blocks, two blocks viz; Medziphema and Chumukedima were randomly selected from the district. Subsequently, 10% villages from the list of 60 villages altogether from both blocks and 3 villages viz; kukrima, suchonema and model village from medziphema block and 3 villages viz; seithekiema, tenyiphe and Chumukedima village from Chumukedima blocks was selected randomly. At final stage of the sampling, borrowers was selected from villages were grouped in to three categories viz; marginal, small and medium. A sample of 20% was selected randomly from each farm size group in proportion to their number in each class / category. The primary data were collected with the help of pre-tested schedule by interviewing the borrowers either of one enterprise viz; crop production, livestock and fishery; thereafter contact them personally during the year 2008-2012. The secondary data was collected from block office, district statistical office and district agriculture office and from journals, periodicals and magazines.

**Functional analysis**

In order to establish a functional relationship of different enterprises with its strategic input variables, Cobb-Douglas production function of the following type have been used to assess the impact of inputs towards the gross return:.

$$y = a \cdot x_1 \cdot x_2 \cdot x_3 \cdot x_4 \cdot x_5 \cdot x_6 \cdot x_7 \cdot x_8 \cdot \dots \cdot x_n$$

Whereas, y is the output

$x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8, \dots, x_n$  are the inputs or independent variables

$b_1, b_2, b_3, b_4, b_5, b_6, b_7, b_8, \dots, b_n$  are the elasticity of production of the input factors  $x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8, \dots, x_n$  respectively.

Whereas, a is constant,

$x_1$  is Human labour cost in ₹ / ha,

$x_2$  is Seed or sapling or animal or fingerling cost in ₹ / ha,

$x_3$  is Fertilizer or nutrient cost in ₹ / ha,

$x_4$  is Plant protection or animal or fingerlings medicine cost in ₹ / ha,

$x_5$  is Machinery or equipment used cost in ₹ / ha,

$x_6$  is Transportation cost in ₹ / ha,

$x_7$  is Marketing cost in ₹ / ha,

$x_8$  is Miscellaneous cost in ₹ / ha and

y is the total cost in ₹ / ha.

The function becomes linear in logarithmic form as

$$\text{Log } y = \text{log } a + b_1 \text{ log } x_1 + b_2 \text{ log } x_2 + b_3 \text{ log } x_3 + b_4 \text{ log } x_4 + b_5 \text{ log } x_5 + b_6 \text{ log } x_6 + b_7 \text{ log } x_7 + b_8 \text{ log } x_8 + \dots + b_n \text{ log } x_n$$

The Cobb-Douglas production function allows greater degree of freedom and has the advantage over other types of function as the estimated can be computed conveniently. The regression co-efficient ( $b_1$ ) in Cobb-Douglas production function directly indicate the elasticity of production which measures the percentage change in out for unit percentage change in the input (Bhowmick, 1975).

The Cobb-Douglas production function facilitates to examine the resource use efficiency by comparing marginal value product (MVP) to its factor cost. The marginal value product of an input is computed as follows:

$MVP x_1 = d_y / d_{x_1} = b_1 \cdot y / x_1$ , where  $b_1$  is the elasticity co-efficient of  $x_1$ ,  $x_1$  and y are the geometric means of input and output respectively.

In the analysis of input-output relationship, separate function was fitted for different farm size groups. Preferential ranking technique was utilized to identify the constraints faced by the borrowers and asked to rank the constraints they perceive as bank problems or protection in order of preference. The quantification of data was done by first ranking constraints and then calculating the Rank Based Quotient (RBQ) as given by (Sabarathanam 1988), which is as follows:

$$R. B. Q. = \sum fi (n+1-i) / N \times n \times 100$$

Wherein: fi = Number of borrowers reporting a particular problem under i<sup>th</sup> rank,

N = Number of borrowers,

n = Number of problems identified.

Based on top rank borrowers problems identified at farmers field. Further, the satisfaction level of respondent farmers about extension services provided was also measured based on various dimensions. To measure the impact of satisfaction level a formula was used; which is developed by (Kumaran and Vijayaragavan, 2005).

The individual obtained score Client Satisfaction index = The individual obtained score / Maximum score possible (Dhaka and Poonia, 2010).

Finally the data thus collected were tabulated and statistically analysed to interpret the results.

## Results and Discussion

Table 1 reveals that maximum households 343 (66.35%) was found on small farms (1 to 3 ha of land),

followed by the marginal farms (> 1 ha of land) the total households was 88 (17.02%) and it was found least on medium farm (3 ha and above land) with 86 (16.63%), respectively. The marginal farm is having 10 respondents (16.67%), 40 respondents (66.66%) on small and 10 respondents (16.67%) on medium farm size groups, respectively.

Table 2 reveals that by aggregating the cross-sectional data of all the farms in various farm size groups, production has been estimated for all the selected sample farms. The ordinary least square (OLS) estimates of parameters, the value of R<sup>2</sup> in all farm samples were found to be 0.9956, which shows that 99% of the variation of dependent variable explained by the independent variation chosen in the equation, which is found to be good fit for the present study.

**Table 1. Numbers of selected respondents on the basis of land holdings (ha)**

S. No.	Farm Size group	Total households	Samples Farmers
1.	Marginal (> 1 ha of land)	88 (17.02)	10 (16.67)
2.	Small (1 to 3 ha of land)	343 (66.35)	40 (66.66)
3.	Medium (3 ha and above land)	86 (16.63)	10 (16.67)
Total		517 (100.00)	60 (100.00)

The figures in the parenthesis indicates percentage to the total

**Table 2. Regression Coefficient along with their Standard Errors and Coefficient of Multiple Determinations on sample farms.**

Sl. No.	Particulars	Farm size groups			
		Marginal	Small	Medium	Pooled
1.	Number of observation(s)	10	40	10	60
2.	Constant (b)	-16384 <sup>NS</sup> (5.09E+10)	2723.806 <sup>***</sup> (3.912539)	-5750.69 <sup>NS</sup> (5319.275)	716.0078 <sup>***</sup> (947.6455)
3.	x <sub>1</sub>	0.025571 <sup>NS</sup> (0.038727)	0.19939* (0.088797)	0.095459 <sup>NS</sup> (0.204114)	0.245545* (0.07564)
4.	x <sub>2</sub>	33.91158* (24.25238)	4.847295* (3.912539)	7.061947* (6.164715)	1.398507* (1.995703)
6.	x <sub>3</sub>	-15.3005 <sup>NS</sup> (8.979653)	-4.87357 <sup>NS</sup> (4.984829)	25.75573 <sup>***</sup> (15.20491)	-1.89379 <sup>NS</sup> (4.724446)
7.	x <sub>4</sub>	3.17E+16 <sup>NS</sup> (2.96E+16)	53.15255* (259.3595)	-103.514 <sup>NS</sup> (92.39518)	-29.5739 <sup>NS</sup> (39.16007)
8.	x <sub>5</sub>	-42.0953 <sup>NS</sup> (27.14217)	-11.1585 <sup>NS</sup> (67.17767)	-10.6342 <sup>NS</sup> (7.810345)	9.466241 <sup>***</sup> (4.491117)
9.	x <sub>6</sub>	44.36427 <sup>***</sup> (30.91366)	-1.0825 <sup>NS</sup> (1.791139)	16.18642 <sup>***</sup> (2.428331)	2.708045* (1.695795)

10.	$x_6$	244.4481 <sup>***</sup> (131.2289)	6.654108 <sup>*</sup> (17.58313)	45.66887 <sup>***</sup> (37.39815)	10.34837 <sup>**</sup> (15.08908)
11.	$x_7$	-5E+15 <sup>NS</sup> (4.62E+15)	-0.20627 <sup>NS</sup> (2.452675)	4.768853 <sup>*</sup> (3.139343)	-0.38046 <sup>NS</sup> (1.41825)
12.	$x_8$	-16384 <sup>NS</sup> (5.09E+10)	2723.806 <sup>***</sup> (3.912539)	-5750.69 <sup>NS</sup> (5319.275)	716.0078 <sup>***</sup> (947.6455)
13.	R <sup>2</sup> Value	0.995627 <sup>***</sup> (312.048)	0.870789 <sup>***</sup> (1527.016)	0.99505 <sup>***</sup> (849.6419)	0.947637 <sup>***</sup> (1787.897)
14.	F Value	28.460 <sup>***</sup>	26.115 <sup>***</sup>	25.128 <sup>***</sup>	115.372 <sup>***</sup>

(Figures in parenthesis are standard errors)

(\*\* - significant at 1% and \* - significant at 5% level of significance)

Table 2 reveals that the value of co-efficient of multiple determinations (R<sup>2</sup>) ranged from 99.56% as maximum in marginal farm size group to 87.08% as minimum of the selected sample in small farm size group, which will be explaining the variation in the dependent variables by the selected independent variable chosen in the equation in different farm size groups on beneficiaries farms. Even on the non-beneficiaries farm size group it was found maximum (99.99%) to minimum (94.55%) on the sample farms, which shows as good fit of the selected model. The remaining variation of dependent variable might be due to other variables, which have been used in excess or not properly used.

In case of  $x_2$  it was found to be positive on overall, marginal and small with maximum return and minimum return, the variables were found to be statistically significant at 10% level, which indicates a good fit with more potential in compare to other inputs toward the gross returns.

The regression co-efficient of  $x_3$  was found Statistically significant at 1% level in medium farm size group, which shows that in compare to the other farm size groups it could be better utilized of the resources on the farm because of having positive role for gaining the more net return. While on other farms its contribution is less or may not be utilized or used in excess, which ultimately provides the negative response towards the gross return. So it may be concluded that the investment on the medium farm size group may have further more potential after the investment or by shifting the other inputs for getting better return.

The value of  $x_4$  on small farm size group, it was found statistically significant at 10%, which shows

the positive significant contribution of the inputs to the gross return. So it will be better to shift the other inputs as an investment to these inputs for getting better prospects as well as benefiting the farmers. While on marginal, medium and overall farm size group the beneficiaries were found statistically non-significant, which indicates that in the coming days it is better to shift the inputs to the potential areas for get maximum profit after reshuffling them, in compare to other inputs, as it was little contribution towards the gross return.

The value of  $x_5$  on overall farm size group was found to be statistically significant at 1% level, which shows the positive significant contribution of the inputs to the gross return. So it will be better to continue the investment on it for getting better prospects as well as benefiting the farmers too. While on marginal, small and medium beneficiaries farm size group were found statistically non-significant, which indicates that in the coming days it is better to shift the inputs to the potentially areas to get maximum profit in compare to other inputs, wherever contributing more towards the gross return.

The value of  $x_6$  on marginal, medium and overall farm size group were found to be statistically significant at 1 and 10% level, which shows the positive significant contribution of the inputs to the gross return. So it will be better to continue the investment on the inputs for getting better prospects. While on small beneficiaries farm size groups was found to be statistically non-significant, which indicates that in the coming days it is better to shift the inputs to the potential areas to get maximum profit in compare to other inputs, however getting positive response and having more potentiality towards the gross return.

The value of  $x_7$  on overall and medium farm size groups was statistically significant at 1%, which shows the positive significant contribution of the inputs to the gross return. So it will be better to continue the investment on these inputs for getting better prospects as well as benefiting the farmers after reshuffling the input cost. While in small and overall beneficiaries farm size groups both were found statistically significant at 1 and 5% level, which indicates that in the coming days it is better to invest more to these inputs due to the potentiality variables for getting maximum profit in compare to other inputs.

The value of  $x_8$  on medium farm size groups was found to be statistically significant at 10% level, which shows the positive significant contribution of the inputs to the gross return. So it will be better to continue the investment on these inputs for getting better prospects as well as benefiting the farmers after reshuffling the input cost. While on marginal, small and overall beneficiaries farm size group were found non-statistically significant, which indicates alarms in the days to come, it is better to shift the

inputs to get maximum profit in compare to others.

The positive values of were found to be statistically significant at 1% level of probability, indicate that the investment of the input has positive contribution and having further more potentiality of the input towards the gross return, so investment may be continue in the coming days.

Table 3 reveals how efficiently the farmers of the study area have been utilizing their resource; the marginal value product (MVP) of an input was compared with its respective factor cost. An optimal use of that factor was indicated as the ratio approach unity. The value of ratio greater than unity meant that returns could be increased by using more of that resource and for value of ratio will be less than unity indicates improper use of the resources.

The value of MVP for  $x_2$  was found to be positive on beneficiaries farm size group, indicates that addition of one unit of this input would be supplementing an amount ranging from ₹ 4.34 to ₹ 40.54 on different farm size group and further contributes towards the gross return, so it may be continue in the days to come.

**Table 3. Resource use efficiency of various inputs across various farm size groups of sample farmers**

S. No.	Input Factor	Geometric Mean	MVP (₹)	Factor cost (₹)	MVP: FC (₹)
1.	Marginal				
i).	x2	239.363	932.569	23	40.5465
ii).	x6	260.841	244.003	4	61.0008
iii).	x7	282.096	49745.2	175	284.258
2.	Small				
i).	x2	1146.43	181.774	23	7.9032
ii).	x4	305.331	1594.58	17	93.7986
iii).	x7	725.483	1846.51	175	10.5515
3.	Medium				
i).	x2	1956.09	199.5	23	8.67391
ii).	x3	57.1146	727.599	22	33.0727
iii).	x6	1713.19	91.4533	4	22.8633
iv).	x7	1248.93	9547.08	175	54.5547
v).	x8	1289	6.736	1	6.736
4.	Overall				
i).	x2	965.251	43.4703	10	4.34703
ii).	x5	1079.68	2942.42	200	14.7121
iii).	x6	832.766	16.835	4	4.20875
iv).	x7	678.538	2380.3	175	13.6017

The MVP of  $x_3$  was found to be positive on medium beneficiaries' farm size group, which indicates that addition of one unit of input, will be contributing an amount of ₹ 33.07 towards the gross income, due to better prospects of input for gaining profit after shifting the other inputs.

The MVP of  $x_4$  on small farm size groups was found to be positive indicate that addition of one unit of input will increase gross return by ₹ 93.80, which clearly shows that farmers may continue to invest more on input for getting better prospects in the future for more gross income.

The MVP of  $x_5$  on overall farm size group was found to be positive, indicating that addition of one unit of input will increase gross return by ₹ 14.71, which will help the farmers to continue the investment on input for getting more gross income on the farms.

The MVP of  $x_6$  on marginal, medium and overall farm size groups were found to be positive, indicating that addition of one unit of these inputs would be increasing the gross returns, so it was clear that farmers may continue to invest more on these inputs for getting better prospects in the future.

The MVP of  $x_7$  on marginal, small, medium and overall farm size groups were found to be positive values, indicating that addition of one unit of these inputs will increase gross return.

The MVP of  $x_8$  on medium farm size group was found to be positive, indicate that addition of one unit of input will increase gross return by ₹ 6.73, clearly shows that farmers may continue to invest more on the input for getting better prospects in the future for better gross returns.

The gross sectional data of overall farm size have been aggregated and the ratio of MVP to its factor cost was computed. It was observed that ratio of  $x_1$  to  $x_8$  were found to be positive and negative both values. Positive indicates the greater than unity and indicates that the farmers can incurred more investment on those inputs for getting better returns, while the negative values indicating either excess use of inputs and adverse response towards the gross return, which needs to be curtailed immediately and further investment of such inputs must be shifted towards the higher results inputs which will provide the positive contribution to the gross return.

The table 4 reveals that the extent of satisfaction level of borrowers' / farmers over extension services and performance of bank personnel was measured by Client Satisfaction Index (CSI). It is observed that majority of the respondent farmers expressed low (48.33%) and medium level (26.67%) of satisfaction for extension services and performance of bank personnel under study area. The results are in conformity with the results of (Kumaran and Vijayaragavan, 2005).

**Table 4. Extent of borrower's satisfaction (Client Satisfaction Index) of extension services rendered by banking system / personnel**

S. No.	Satisfaction level	Respondents	Percentage
1.	Low	29	48.33
2.	Medium	16	26.67
3.	High	15	25.00
Total		60	100.00

Table 5 reveals that respondents were facing many constraints during acquiring the loan from cooperative bank, most of that listed in the table 9. Amount of loan was the foremost challenge to the borrowers and has been ranked as the most perceived constraint with a RBQ 33.33, followed by preparation of DPR (RBQ 30.67), lack of technical guidance from bank (RBQ 30.00), time of disbursement (RBQ 28.33) were highly ranked constraints reported by the respondents, subsidiary / rebate on loan (RBQ 20.00), disbursement of loan (RBQ 14.67), credit facilities and miscellaneous (RBQ 12.00), form issued by the bank (RBQ 11.00), knowledge about type of loan (RBQ 9.00), bank interest rate (RBQ 8.00), filling up of loan forms (RBQ 5.33), repayment period (RBQ 4.67) has been perceived as constraints of cooperative bank finance, but on a lower scale.

## Conclusion

The main reasons co-operatives bank lacking in the state are due to lack of human resources. Lack of manpower has hindrance on the bank expansion as well as supervision. As there are less bank branches more area has to be covered by a bank branch in that locality, this has caused work load on the bankers especially on the limited field staff who has to cover more areas / villages. The limited bank staffs that are work

**Table 5. Ranking of constraints faced by the borrowers during acquiring the cooperative bank finance**

Sl. No.	Constraints	Ranks					R. B. Q.	Overall Rank
		I	II	III	IV	V		
1.	Amount of loan	20	12	11	14	3	33.33	I
2.	Disbursement of loan	11	18	8	18	5	14.67	VI
3.	Time of disbursement	17	12	11	9	11	28.33	IV
4.	Credit facilities	12	23	8	3	14	12.00	VII
5.	Technical guidance from bank	18	15	14	11	2	30.00	III
6.	Bank loan formalities	12	13	9	11	15	12.00	VII
7.	Form issued by the bank	11	16	12	10	11	11.00	VIII
8.	Knowledge about type of loan	9	11	11	21	8	9.00	IX
9.	Filling up of loan forms	8	9	14	22	7	5.33	XII
10.	Repayment Period	7	7	12	24	10	4.67	XIII
11.	Bank interest rate	8	6	21	18	7	8.00	X
12.	Preparation of DPR	23	5	17	9	6	30.67	II
13.	Subsidiary / rebate on loan	15	12	16	9	8	20.00	V
14.	Guarantor / securities required	9	11	15	11	14	6.00	XI
15.	Miscellaneous lement inal value for the present studyction, livestock and fishery	12	14	13	13	8	12.00	VII

loaded with are faced with poor or lack of logistics supports and poor communication to do their works efficiently.

Apart from misutilization and diversion of loans for other uses, the use of modern technology in the farming system is lacking which reduces their productivity. The farmers neither are reluctant to participate in trainings on modern means of farming nor are willing to use modern technology in the farming system.

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