DEFICIENT CREDIT: A BARRIER TO AGRICULTURAL DEVELOPMENT IN POST REFORM PERIOD

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ABSTRACT

The objective of the research paper is to examine the deficient credit availed by the farmers in post reform period which poses barrier to meet the cost of production. In post reform period there is remarkable changes in agricultural production due to the use of purchased inputs like HYV seeds, fertilisers, pesticides, hired labour etc. Price of these inputs is increasing day by day .So; it is quite difficult on the part of the farmers to meet the cost of production within the credit provided by the financial institutions. Accordingly in post reform period farmers require more institutional credit to avoid depending on informal sources. So, in this paper in order to examine the more credit required by the farmer over the credit provided by the financial institutions in post reform period, a field study (2009-10) of three villages of different degree of Bargarh district (Orissa) India has been done. In order to test the hypotheses to know the significant difference in the more credit required by the farmer over the credit availed across the villages and farm sizes TWO WAY ANOVA TEST has been done.

Keywords: More, Credit requirement, Post reform period, Cost of production.

INTRODUCTION:

In post reform period the application of new technological purchased inputs like HYV seeds, fertilisers, pesticides, hired labour etc helps a lot to boost the agricultural production and productivity. But, due to the rise in the price of such agricultural inputs, cost of production in agricultural sector is increasing. In order to meet the increased cost of production farmers require adequate and timely credit. However, the credit provided by the financial institutions to agricultural sector is inadequate and not equal to the cost of production. This compels the farmers to depend on informal sources to meet the cost of production. Thus in the emerging competitive scenario in the Indian financial system in post reform period the financial institutions have to improve their function to meet the more requirement of credit i.e.to provide the credit equal to cost of production.

India has emerged as one of the fastest growing economies of the world in post reform period. The growth rate of Gross Domestic Product (GDP) of India is about nine percent. But, for sustainable economic development the agricultural sector has to grow at a consistent four percent growth rate of GDP (Karmakar,2011).In 11^{th} five year plan the agriculture and allied sector have recorded an average growth of 2.03 per cent against the plan target of 4 per cent per annum(Tripathy,2011).In order to increase the growth rate of agricultural sector, the institutional credit availed by the farmers should be equal to the cost of production, by which there would not be any requirement of more credit. From 1991 onward attempt has been taken to transfer the credit institutions into organisationally strong, financially viable and operationally efficient unit (Hazra, 2011). However, the quantum of credit to agriculture during 2005-06 to 2009-10 has increased at 25% per annum. Government has raised the target of credit flow to the farmers form Rs. 375000 cross in 2010-11 to Rs. 475000 crores in 2011-12. It is right that agricultural credit has witnessed a jump of around 220 times (Tripathy, 2011). But this growth in institutional credit has not supported the desired expansion of credit due to the increase in the rise in the price of the agricultural inputs like fertilisers, pesticides, wages etc.

LITERATURE REVIEW:

Sundaram (1991) in his study has given emphasis on adoption of modern technology. Farmers are more receptive to new idea and interested to take risks. New institutions have been established and agencies have been developed for ensuring services and supplies required by modern agriculture. Bandyopadhyay (1993) has observed that in the last few years the investment on agricultural sector has declined. So, sufficient formal investment must be done in this sector. The adequate formal investment will increase the production as well as productivity of agriculture. Srivastav (1995) has emphasised on the importance of institutional credit and suggested that bank should provide adequate credit to agricultural sector for increasing production and productivity which leads to the prosperity of the nation. Mamoria and Tripathy (2003) have rightly said in their study that agricultural production and efficiency largely depend upon the inputs applied and the methods adopted. In 1977, the ministry of food and agriculture has rightly reflected in its report that over the last two decades the average productivity per acre has been increasing due to increase in the use of HYV seeds, application of high dose of fertiliser and increase in availability of irrigation facilities. However, Janiah, Otsuka and Hossian (2005) have concluded in their work that various modern technologies developed and adopted by the farmers over the period have continued to make a considerable impact on rice productivity growth. Hazra (2011) in his study has expressed his regret about the inaccessibility of credit by poor rural people. Despite several policy reforms rural India continues to experience inaccessible credit for rural people. So he has also suggested improving credit operation at grassroots level. Karmakar(2011) has emphasised on the importance of credit in agriculture sector. According to him credit has a very significant role in supporting agricultural production and investment. However, the poor outreach of formal institutional credit structure is a serious issue that needs to be corrected expeditiously.

The above literature review shows the importance of the use of purchased inputs like fertiliser, pesticides, HYV seeds, etc. and institutional credit for the development of agricultural sector as well as the economy of the nation. But specifically the study on the required amount of the credit availed by the farmer i.e. the credit equal to the cost of production in post reform period across the villages and farm sizes is found to be lacking. So, in this paper an attempt has been made to study the requirement of more credit over the credit availed by the farmers to meet the cost of production across the villages and farm sizes in post reform period.

OBJECTIVES OF THE STUDY:

The objectives of the study are:

i. To analyse the amount of institutional credit availed by the farmers.
ii. To examine the more credit requirement over the institutional credit availed by the farmers across the villages and farm sizes.

iii. To deduce certain findings for an effective concluding remarks for government and policy makers to recommend for a vibrant and effective flow of credit i.e. the credit equal to cost of production in agricultural sector in post reform period through the financial institutions.

SURVEY DESIGN, DATABASE AND METHODOLOGY:

The present study is confined to Bargarh district of Orissa state of India and its rice (Paddy) cultivation. Bargarh district lies between 20º 43' N and 22º 11' N latitudes and 82º 39' E and 85º 13' E longitudes. The study is mainly based on the primary source of data collected through a pre-designed questionnaire. But to cross check the primary data pertaining to credit and certain other aspects for the year under study 2009-10 the help of secondary source of data collected from the published/unpublished records of primary Agricultural Societies/ Cooperative Banks, Commercial Banks and other sources has been taken. The villages were selected by stratified random sampling method. The selections of the sample cultivators of the sample villages are made on the basis of census method. Based on the operational holdings the farms in each village under study are divided into 3 categories such as Small (Upto 5 acres), Medium (5.01 to 10 acres) and Large (more than 10 acres) farms. Altogether 226 samples were collected from three sample villages under study. Three villages with varying degree of agrarian development and irrigation facilities drawn from 3 different blocks of the district are considered for the present study. One village is chosen from irrigated (double crop area) pocket, the other one from semi-irrigated (where irrigation for one crop i.e. khariff crop is assured) and the other from rain fed (non-irrigated) pocket. The institutional agricultural credit (Short-term credit i.e. crop loan) availed by the farmers of different villages during the year under study has only considered for the purpose of present study. Besides this, the discussions with the farmers in the respective villages have also been made while collecting data as informal conversation was convenient to understand the requirement of more credit over the institutional credit availed.
To test the significant difference in the percentage of requirement of more credit over the institutional credit availed by the farmers across the villages and farm sizes and the 'F' values are found out by TWO-WAY ANOVA Table where the Villages (3 villages - irrigated, semi-irrigated and non-irrigated) and Farm sizes (3 size classes - Small, Medium and Large) are known as Column and Row elements respectively.

$$F_t = \frac{S_t^2}{S_E^2} \quad \sim F(k-1),(h-1)(k-1) \quad \textit{for column (i.e. villages)}$$
$$df = k-1 = 2$$
$$df = (h-1)(k-1) = 4$$

$$F_v = \frac{S_v^2}{S_E^2} \quad \sim F(h-1),(h-1)(k-1) \quad \textit{for row (i.e.farm sizes)}$$
$$df = h-1 = 2$$
$$df = (h-1)(k-1) = 4$$

An alternative hypothesis (H_a) is accepted/null hypothesis (H_0) is rejected if calculated value of F is greater than its tabulated value at the corresponding degree of freedom (df) and level of significance and vice versa.

HYPOTHESES:

The hypotheses taken for the purpose of the present study are mentioned below:-

1. H_0: There is no significant difference in the percentage of requirement of more credit over the institutional credit availed by the farmers in post reform period across the villages.
   H_a: There exists a significant difference in the percentage of requirement of more credit over the institutional credit availed by the farmers in post reform period across the villages.
2. H_0: There is no significant difference in the percentage of requirement of more credit over the institutional credit availed by the farmers in post reform period across the farm sizes.
   H_a: There exists a significant difference in the percentage requirement of more credit over the institutional credit availed by the farmers in post reform period across the farm sizes.

RESULT ANALYSIS:

The cost of production, institutional farm credit along with the more credit requirement over cost of production both in rupees and percentage are represented in table-1.

TABLE – 1: INSTITUTIONAL CREDIT AVAILED, COST OF PRODUCTION AND MORE CREDIT REQUIREMENT OVER CREDIT AVAILED IN POST REFORM PERIOD (IN RUPEES/PERCENTAGE)

	Village / Farm Size	Cost of production (in Rs.)	Total Institutional credit availed (in Rs.)	More credit Requirement Over cost of Production (in Rs.)	More credit Requirement Over cost of Production (%)
	Irrigated				
V_1	Small	924765	728000	196765	21.27
	Medium	1279943	1014400	265543	20.74
	Large	275380	237500	37880	13.75
	Total	**2480088**	**1979900**	**500188**	**20.16**
	Semi-Irrigated				
V_2	Small	428275	415000	13275	03.09
	Medium	648105	459500	188605	29.10
	Large	434710	330000	104710	24.08
	Total	**1511090**	**1204500**	**306590**	**20.28**
	Non-Irrigated				
V_3	Small	212775	186000	26775	12.58
	Medium	333395	260000	73395	22.01
	Large	552865	329000	223865	40.49
	Total	**1099035**	**775000**	**324035**	**29.48**
	All V				
	Small	1565815	1329000	236815	15.12
	Medium	2261443	1733900	527543	23.32
	Large	1262958	896500	366458	29.01
	Total	**5090216**	**3959400**	**1130816**	**22.21**
	V.R or F. Ratio for Column(across the villages)				$0.33^{\#}$
	V.R or F. Ratio for Row (across the farm sizes)				$1.35^{\#}$

Source: - Field Survey and Compiled from questionnaire.

Note:-

1. $F_t = \frac{S_t^2}{S_E^2}$ ~F(k-1),(h-1)(k-1) for column (i.e. villages)
   df = k-1= 2
   df = (h-1)(k-1)= 4

   $F_v = \frac{S_v^2}{S_E^2}$ ~F(h-1),(h-1)(k-1) for row (i.e. farm sizes)
   df = h-1= 2
   df = (h-1)(k-1)= 4
2. $^{\#}$ Not significant at any level.
3. In Column the 3 size classes of farms i.e. small, medium and large farms were considered. In Row the 3 villages i.e. V_1, V_2 and V_3 were considered.
4. The total cost of production = cost incurred for the use of HYV seeds + fertilizer + pesticide +hired human labour +machine labour+ others.
5. The cost of production incurred and institutional credit availed by the farmers in post reform period i.e. 2009-10 is only considered here 6)
6. More credit requirement refers to the difference between cost of production and institutional credit availed by the farmers.

It is observed from the above table that there exists a variation in the more credit requirement by different farm sizes in different villages (such as V_1, V_2 and V_3) under study in post reform period .In V_1, the percentage of more credit requirement in post reform period by small farms is found highest i.e. 21.27% followed by medium and large farms i.e. 20.74% and 13.75% respectively. On an average in V1 more credit requirement is 20.16% in post-reform period. In V_2, the percentage of more credit requirement is found highest by medium farms i.e.

29.10% followed by large and small farms i.e. 24.08% and 03.09% respectively. On an average for the entire V_2 it is 20.28%.In V_3, the more credit requirement by the large farms is found highest i.e. 40.49% followed by medium and small farms i.e. 22.01% and 12.58% respectively. On an average for V_3 it is 29.48%.For the entire villages (All V) under study the more credit requirement in post-reform period is found 22.21%.

TESTING OF HYPOTHESES:

The hypotheses taken for the study are tested as follows based on the result of 'F' Test shown in the table-1

HYPOTHESIS NO.1:

There is no significant difference in the percentage of requirement of more credit over the institutional credit availed by the farmers in post reform period across the villages. This null hypothesis (H_0) is accepted as the calculated 'F' ratios i.e. $F_{\sim(2,4)} = 0.33$ is less than the tabulated value. (Alternative hypothesis is rejected.)

HYPOTHESIS NO.2:

There is no significant difference in the percentage of requirement of more credit over the institutional credit availed by the farmers in post reform period across the farm sizes. This null hypothesis (H_0) is accepted as the calculated 'F' ratios i.e. $F_{\sim(2,4)} = 1.35$ is less than the tabulated value. (Alternative hypothesis is rejected.)

SUMMARY AND MAJOR FINDINGS:

The brief outline of more credit required by the farmers over the credit availed in all type of villages and farm sizes and the test of significance by way of 'F' test are represented on Table -1
It is found from the 'F' test that the computed value of 'F' found $F_{\sim(2,4)} = 0.33$ and $F_{\sim(2,4)} = 1.35$ for testing the significant difference across the villages and farm sizes respectively regarding the percentage of requirement of more credit over credit availed. The percentage of requirement of more credit over credit availed is statistically insignificant as the calculated 'F' ratios are less than the tabulated value at any level of significance. Thus, it is found that in post-reform period all farmers irrespective of villages and farm sizes require more credit over the credit availed to meet the increased cost of production.

CONCLUSION:

It is concluded that due to the homogeneity in sanctioning the credit by the financial institutions irrespective of villages and farm sizes without considering the actual cost of production, there is the requirement of more credit over the credit availed. In post reform period the cost of agricultural production has been increased due to the rise in the price of inputs like fertilizer, pesticides, HYV seeds, hired labour, machine labour etc. Besides, so far the credit limit fixed by the government and financial institutions is concerned; the amount is same in all villages irrespective of farm sizes. Accordingly, it is quite difficult on the part of the farmers to manage the cost of production within the credit availed. Thus, the financial institutions and policy makers should take all possible measures to sanction required amount of credit to the farmers i.e. the credit equal to the cost of production in this post reform period.

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