



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2023; 12(5): 1055-1059
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www.thepharmajournal.com

Received: 08-03-2023

Accepted: 19-04-2023

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Institutional credit on agriculture in India: Status and overview

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Abstract

Institutional credit flow has greatly helped the agricultural sector in India, with a significant increase in credit flow from 2005-2020. The government has been providing interest subvention to those farmers who repay their short-term crop loans on time, thus bringing down the effective rate of interest to 4 percent per annum. The contribution of commercial banks to the agricultural credit is highest with 70 percent followed by Co-operative banks and RRB. The ratio of credit to Agricultural GDP and Credit to total GDP were higher during the period of 2017-18, indicating the efficacy of the credit. The factors influencing the total agricultural output growth have been analysed through linear regression, and it has been observed that credit has a significant relationship with agricultural output at a 10 percent level of probability. The determinants of the supply of institutional credit have also been analysed, and it has been observed that all the variables except pesticide consumption have an influence on agriculture credit. Gross cropped area has the most significant impact on credit flow, followed by gross irrigated area and GDP. Overall, the flow of institutional credit to the agricultural sector is crucial for its growth and development.

Keywords: Agriculture, institutional credit, GDP, Production function

Introduction

In developing countries like India, the development of agriculture sector is important for a variety of reasons. Agriculture is still the primary source of livelihood for majority of people i.e., about 68 percent rural people (Anonymous 2021) ^[1]. It has been observed that the required growth of productivity in agriculture means that more capital must be invested in it. Farmers need much more capital than they can afford to save and small and marginal farmers require a higher input of capital as their savings are meager. Credit is a condition that enables a person to extend his or her control over ownership of resources. The Indian agriculture is not only capital starved, but also faces vagaries of nature. Irrigated agriculture forms roughly 40 percent of total cropped area (Golait and Ramesh, 2007) ^[6].

The practice of extending institutional credit to agriculture can be traced back to that period when farmers were provided with such credit by the Government during drought years. Thinking to do with credit, cooperation began in the latter part of the nineteenth century. Finally, the Cooperative Societies Act was passed in 1904 and cooperatives were seen as the premier institutions for disbursing agricultural credit. The early years of the twentieth century were characterized by continuous official attention to the provision of rural credit the Mac Lagan Committee on Cooperation in India issued a report in 1915 advocating the establishment of provincial cooperative banks, the Royal Commission on Agriculture further examined the program of rural credit in 1926-27. It was then reported that in many provinces credit over dues to these credit cooperative institutions constituted 60 to 70 per %cent of the outstanding principal due.

The need for agricultural finance in India is especially acute for small and marginal farmers who account for a significant proportion of the country's farming population. These farmers face several challenges, including limited access to credit, lack of collateral, and low financial literacy (Kumar and Upasana, 2017) ^[2]. Financial institutions have traditionally been reluctant to lend to small and marginal farmers due to the high risks associated with agriculture and the lack of collateral. To address the need for agricultural finance, the Government of India has taken several initiatives, including the establishment of specialized institutions such as the National Bank for Agriculture and Rural Development (NABARD). NABARD provides credit and other financial services to farmers and rural communities and promotes rural development through various schemes and initiatives.

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In addition to government initiatives, private sector participation in agricultural finance has also increased in recent years. Several banks, non-banking financial companies, and microfinance institutions have started providing credit and financial services to farmers, including innovative products such as crop insurance and weather-based insurance. Agricultural finance is essential for the growth and development of the agriculture sector in India. The availability of credit and financial services can help farmers invest in technology, improve productivity, and manage risks associated with farming activities (Kumar *et al.* 2010) [3]. While there have been several initiatives taken by the government and private sector to improve access to agricultural finance, more needs to be done to ensure that small and marginal farmers have access to credit and other financial services to support their livelihoods and contribute to the growth of the agriculture sector in India. The significance of Agricultural credit in India has led to the initiation of the present study.

Methodology

The study is based on the secondary data compiled from different sources for the period 2005-06 to 2019-20. The data were compiled from the annual reports published by the Department of Agriculture and Co-operation, Ministry of Agriculture, Government of India (GoI), Reserve Bank of India (RBI) and National Bank for Agriculture and Rural Development (NABARD).

Determinants of Supply of institutional credit

Supply of the institutional credit in being influenced by the number of variables so, here I have been tried to ascertain the variables which exhibit influence on the flow of credit to the agriculture by using Cobb Douglas function. Hence flow of credit has been considered as dependent variables whereas, Gross cropped Area (GCA), Gross Irrigated Area (GIA), Fertilizer Consumption (FC) and pesticide consumption (PC) are as independent variables.

$$Y = \beta_0 X_1^{\beta_1} X_2^{\beta_2} X_3^{\beta_3} X_4^{\beta_4} e^u$$

Where,

Y = flow of credit (Crores)

β_0 = Intercept

X_1 = Gross cropped Area (Thousand ha.)

X_2 = Gross Irrigated Area (Thousand ha.)

X_3 = Fertilizer Consumption (Thousand tonnes)

X_4 = Pesticide consumption (Thousand tonnes)

$\beta_1, \beta_2, \beta_3$ and β_4 = Regression co-efficient for input

u = Random error term

The Cobb-Douglas production function was converted into log linear form and co-efficient were estimated using Ordinary Least Square (OLS) as given below.

$$\ln Y = \ln \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \dots + \beta_4 \ln X_4 + u \ln e$$

The regression co-efficient (β 's) were tested using 't' test at chosen Level of Significance (LoS)

Productivity of agricultural credit

In order to ascertain the productivity of agricultural loan, I have been used the linear production function. Where the dependent variable is value of agricultural output (crores), whereas independent variables are total institutional credit

(crores), gross cropped area (thousand ha.) and gross irrigated area (thousand ha.).

Purpose of Agricultural credit

Agricultural credit needs of the farmers can be classified on the basis of purpose into the following categories (Rakesh, 2006) [4]:

1. Productive
2. Consumption needs
3. Unproductive
 1. Under productive needs we can include all credit requirements which directly affect agricultural productivity. Farmers need loans for the purchase of seeds, fertilizers, manures, agricultural machinery, livestock, digging and repairing of wells and tube wells, payment of wages, effecting permanent improvements on land, marketing of agricultural produce, etc. Repayment of these loans is generally not difficult because the very process of production generally creates the withdrawal for repayments.
 2. Farmers often require loans for consumption as well. Institutional credit agencies do not provide loan for consumption purpose. Therefore, farmers depend on moneylenders.
 3. Loans are taken for unproductive purposes such as litigation, marriages, social ceremonies on birth and death of a family member, religious functions, festivals etc.

Sources of agricultural finance

The two major sources of finance in agriculture are institutional and non- institutional sources (Gagan and Sahu, 2007) [5].

A. Institutional Source

Institutional sources consist of the government and co-operative societies, commercial bank including the regional bank, Lead bank.

1) Co-operative Societies

Indian planners consider co-operation as an instrument for economical development of the deprived farmers, particularly in the rural areas. They see in a village panchayat, a village co-operatives and village school, as the trinity of institution on which a self-reliant and just economic and social order is to be built. The co-operative movement was started in India largely with a view to providing agriculturists funds for agricultural operations at low rates of interest and projects them from the clutches of money lenders.

a. Primary Agricultural Credit Society (PACs)

Primary agricultural credit societies are grass root level arms of the short-term co-operative credit structure. PACs deal directly with farmer borrowers, grant short term and medium-term loans and also undertake distribution and making functions. The usefulness of PACs has been rising steadily. The PACs have stepped up their advances to the weaker sections particularly the small and marginal farmers. The progress has been quite spectacular but not sufficient considering the demand of finance by farmers.

b. Central Co-operative Banks

Central Co-operative Banks functions as intermediaries

between the State Co-operative Bank and Primary Agricultural credit society.

c. State Co-operative Banks

These Banks are the apex banks of the Co-operative credit structure. It serves as a link between NABARD from which it borrows and lends to the co-operative central bank and primary societies village.

B. Non – Institutional Source

1. Money Lenders

There are two types of money lenders in rural areas. There are rich farmers or landlords who combine farming with money-lending. There are also professional money lenders whose only occupation or profession is to lend money. The cultivators depend upon the money-lenders for their requirements of cash. However, there are many reasons for the preponderance of the village money-lenders in rural area even now.

1. The money lender freely supplies credit for productive and non-productive propose, and also for short-term and long-term requirements the farmers.
2. He is easily accessible and maintains a close and personal contact with the borrowers often having relations with family extending over generations.
3. Their methods of business are simple and elastic.

2. Landlord and others

Traders and commission agent supply funds to farmers for

productive purpose much before the crops mature. They force the framers to sell their produce at low price and they charge a heavy commission for themselves. Thus, source of finance is particularly important in the case of cash crop like cotton, groundnut, tobacco, and in the case of fruit of chard like mangoes. Traders and commission agent may be bracketed with money lenders, as their lending to farmers is also at exorbitant rates and has other undesirable effects too.

Results and Discussions

Table 1: Target and Achieving of Agriculture Credit (crore) from 2005-06 to 2019-20

| Year | Targeted | Achieved | % achieved |
|---------|----------|------------|------------|
| 2005-06 | 141000 | 180486 | 128.0 |
| 2006-07 | 175000 | 229400 | 131.0 |
| 2007-08 | 225000 | 243569 | 108.2 |
| 2008-09 | 280000 | 541793 | 193.4 |
| 2009-10 | 325000 | 384741.00 | 118.30 |
| 2010-11 | 375000 | 426531.00 | 113.70 |
| 2011-12 | 475000 | 511029.00 | 107.59 |
| 2012-13 | 575000 | 607376.00 | 105.63 |
| 2013-14 | 700000 | 730122.62 | 104.30 |
| 2014-15 | 800000 | 845328.23 | 105.67 |
| 2015-16 | 850000 | 915510 | 107.71 |
| 2016-17 | 900000 | 1065755.67 | 118.42 |
| 2017-18 | 1000000 | 1162616.98 | 116.26 |
| 2018-19 | 1100000 | 1254762.20 | 114.07 |
| 2019-20 | 1350000 | 1392729.00 | 103.17 |

Table 2: Agency-wise Credit Flow to Agriculture in India (Crore) from 2005-06 to 2019-20

| Year | Co-operative bank | RRB | Commercial bank | Total |
|---------|-------------------|----------------|-----------------|---------------|
| 2005-06 | 394049 (21.83) | 15223 (8.43) | 125859 (69.73) | 180486 (100) |
| 2006-07 | 42480 (18.52) | 20435 (8.91) | 166485 (72.57) | 229400 (100) |
| 2007-08 | 436849 (17.93) | 248149 (10.19) | 175072(71.88) | 243570 (100) |
| 2008-09 | 36762(12.80) | 26724(9.31) | 223663(77.89) | 287149 (100) |
| 2009-10 | 63492(16.51) | 35218 (9.16) | 285799 (74.33) | 384514 (100) |
| 2010-11 | 69000 (39.38) | 43000 (9.85) | 314000 (75.00) | 426531 (100) |
| 2011-12 | 69500 (14.63) | 50500(10.63) | 355000(74.74) | 475000 (100) |
| 2012-13 | 84000(14.61) | 71000(12.35) | 420000 (73.04) | 575000 (100) |
| 2013-14 | 125000(17.86) | 100000(14.29) | 47500 (67.86) | 700000 (100) |
| 2014-15 | 140000(17.50) | 120000(15.00) | 540000 (67.50) | 800000 (100) |
| 2015-16 | 140000(16.47) | 120000(14.12) | 590000(69.41) | 850000 (100) |
| 2016-17 | 150000(16.67) | 12500 (13.89) | 625000 (69.44) | 900000 (100) |
| 2017-18 | 156000(15.60) | 14000 (14.00) | 704000 (70.40) | 1000000 (100) |
| 2018-19 | 165000(15.00) | 143000 (13.00) | 792000(72.00) | 1100000 (100) |
| 2019-20 | 167000 (14.00) | 175000(16.00) | 1007000 (70.00) | 1350000(100) |
| CAGR | 2.53 | 6.55 | 13.81 | 15.01 |

Note: figures in the parentheses indicates percentage share of banks

Table 3: Ratio of Agricultural Credit to Agricultural GDP and Total GDP (crore) from 2005-06 to 2017-18 (%)

| Year | Agri. Credit (Crore) | Agri. GDP (Crore) | Total GDP (Crore) | Agri. Credit/agri. GDP | Agri. Credit/Total GDP |
|---------|----------------------|-------------------|-------------------|------------------------|------------------------|
| 2005-06 | 141000 | 503600 | 3253100 | 28.00 | 4.33 |
| 2006-07 | 175000 | 503700 | 3564400 | 34.74 | 4.91 |
| 2007-08 | 225000 | 557000 | 3896600 | 40.39 | 5.77 |
| 2008-09 | 280000 | 555400 | 4158700 | 50.41 | 6.73 |
| 2009-10 | 325000 | 557700 | 4516100 | 58.28 | 7.20 |
| 2010-11 | 375000 | 606800 | 4937000 | 61.80 | 7.60 |
| 2011-12 | 475000 | 982200 | 8106700 | 48.36 | 5.86 |
| 2012-13 | 575000 | 983800 | 8546300 | 58.45 | 6.73 |
| 2013-14 | 700000 | 1037100 | 9036300 | 67.50 | 7.75 |
| 2014-15 | 800000 | 998400 | 9712100 | 80.13 | 8.24 |
| 2015-16 | 850000 | 966300 | 10503300 | 87.96 | 8.09 |
| 2016-17 | 900000 | 1033000 | 11247600 | 87.12 | 8.00 |
| 2017-18 | 1000000 | 1087000 | 17095005 | 92.00 | 5.85 |

Table 4: Factors influencing the total agricultural output growth

| Variables | Coefficients | t Stat | P-value |
|-----------|--------------|--------|---------|
| GIA | 0.06 | 0.41 | 0.70 |
| Credit | 0.47* | 2.22 | 0.09 |
| GCA | -0.15 | -0.22 | 0.83 |

Note: ***, ** & * indicates 1, 5 and 10% level of significance

Table 5: Factors determining the supply of institutional credit

| Variables | Coefficients | Standard Error | t Stat | P-value |
|-----------|--------------|----------------|--------|---------|
| GCA | -3.94*** | 1.75 | -2.24 | 0.06 |
| GIA | -4.56** | 1.59 | -2.88 | 0.02 |
| FC | -19.91 | 29.73 | -0.67 | 0.52 |
| PC | 9705.05 | 18887.21 | 0.513 | 0.62 |
| Agri GDP | 1.06** | 0.41 | 2.56 | 0.04 |
| R Square | 0.61 | | | |

Note: ***, ** & * indicates 1, 5 and 10% level of significance.

Flow of institutional credit

Agricultural credit started depicting growth after the nationalization of bank and it has been growing continuously since then. The Government has been providing crop loans at concessional interest rates since 2006-07. In the financial year (2018-19), the government is providing interest subvention by 2 percent, thus bringing down the effective rate of interest to 4 percent per annum. This interest subvention is provided to those farmers who repay their short-term crop loans on time. In 2009-10 the subvention rate for timely repayment of crop loans was 1 percent which was raised to 2 percent in 2010-11 and further to 4 percent in 2017-18. Over the years, agriculture credit flow has registered significant jump. It has gone up from 180486 Rs. Crores in 2005-06 to Rs. 1392729 crores in 2019-20 (Table 1).

Agency-wise Credit Flow to Agriculture in India

The flow of institutional credit to agriculture and allied activities has greatly helped the farmers who have no resources on their own. The agencies which are involving the flow of institutional credit are Co-Operative Bank (20%), RRB (10%) and Scheduled Commercial Bank (70%). The flow of credit from RRB has been increased from the Rs. 15223 crore (2005-2006) to Rs. 175000 crore (2019-20). Contribution of commercial bank to the agricultural credit is highest with the 70 percent followed by Co-operative (16.00%) and RRB (14.00%) respectively, whereas as the growth rate of total Agricultural credit from 2005-06 to 2019-20 was registered at 15.01 percent. Highest growth observed for the Commercial banks (13.81%) followed by RRB and Co-operative with 6.55 and 2.53 percent respectively.

Ratio of Agricultural Credit to Agricultural GDP and Total GDP

The institutional credit flow to the agricultural sector shown steep increase during the period of 2005-2020, with a compound annual growth rate of (CAGR) 15.01 percent per annum over the period of 2005 to 2020. The ratio of credit to Agricultural GDP and Credit to total GDP were higher i.e., 92.00 percent and 5.85 percent respectively during the period of 2017-18. This ratio indirectly indicates the efficacy of the credit, that is as the ratio increases and decreases the efficacy of credit is decreasing and increasing respectively. So, there is an inverse relationship between the ratio and the efficacy of the credit.

Factors influencing the total agricultural output growth

To know the factors influencing the total agriculture output I have regressed the linear regression by taking the Value of the agricultural output as dependent and rest them as independent variables. It has been observed from the table 3 credit has a significant relationship with agricultural output at 10 percent level of probability; whereas other variables like gross cropped area and gross irrigated area are insignificant.

Determinants of supply of institutional credit

Supply of the institutional credit in being influenced by the number of variables so, here I have been tried to ascertain the variables which exhibit influence on the flow of credit to the agriculture. Hence flow of credit has been considered as dependent variables whereas, Gross cropped Area (GCA), Gross Irrigated Area (GIA), Fertilizer Consumption (FC) and pesticide consumption (PC) are as independent variables.

Gross Cropped Area: From the supply side, flow of credit to the agriculture is said to be depend on the repayment capacity of the borrower. In this context as the area under cultivation increases leads to increased flow of credit.

Gross Irrigated Area: irrigation facility of the farmer increases the level of production and in turn, repayment capacity of the farmer. So, here it is assumed that there is a positive relationship between the irrigated area and flow of credit.

Fertilizer Consumption: In the recent year's farmers are indiscriminately applying the fertilizer which led to increase in their cost of cultivation and in turn, demand for the fund to meet the requirement. So, it is assumed that there is a positive relationship between credit flow and fertilizer consumption. From the table 5, it has been observed that all the variables have the influence on the Agri credit except pesticide and pesticide consumption adding to that more impact was of GCA (-3.94) followed by GIA (-5.56) and GDP (1.06) significantly in hierarchical order.

Conclusion

Credit is an important input in the development of agriculture. So, institutional credit has been playing a very important role in the development of agricultural sector as a result of credit. Institutional credit flow has greatly helped the agricultural sector in India, with a significant increase in credit flow over the years. Access to agricultural finance is critical for the success and growth of the agricultural sector in India. The commercial banks have become the primary source of credit for the farmers, and providing training to them on the procedural formalities of financial institutions could enhance their access to credit. Additionally, it is recommended to adopt and streamline microfinance options to aid small, marginal, and tribal farmers, while effectively linking them to Self Help Groups (SHGs).

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