

FARM FINANCING OVER TWO DECADES: THE TRANSFORMATION OF AGRICULTURAL CREDIT SOURCES IN MADHYA PRADESH

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ABSTRACT

This study investigates the evolving credit landscape for farmers in Madhya Pradesh between 2002-03 and 2018-19, focusing on shifts in loan sources, interest rates, and income growth across varying landholding sizes. Drawing on data from the National Sample Survey Office's (NSSO) Situation Assessment Survey (SAS) Rounds 59 (2003) and 77 (2019), this research has three primary objectives: to analyze the relationship between farmer income growth and loan access, to evaluate changes in the distribution of institutional and non-institutional credit sources, and to assess trends in interest rates and loan shares across these sources.

Using a harmonized categorization of loan sources, this study consolidates government, cooperative bank, and bank loans as institutional sources, and loans from moneylenders, traders, and family connections as non-institutional. Through quantitative analysis, we identify significant trends, including an overall shift towards institutional loans, notably from banks, and reduced dependence on high-cost non-institutional loans. This shift corresponds with declining interest rates for institutional loans, likely a result of enhanced agricultural policies and financial reforms. The findings reveal critical insights into credit accessibility challenges for small farmers and emphasize the role of targeted policy interventions in supporting equitable financial inclusion, contributing to sustainable agricultural growth and income stability.

Keywords: Farmer credit sources, institutional loans, non-institutional loans, interest rate trends, income growth, Madhya Pradesh agriculture

1. INTRODUCTION

Agriculture in India, and particularly in the state of Madhya Pradesh, remains a crucial sector for economic growth and rural livelihoods. However, it is also one of the most financially vulnerable industries, largely due to the inherently unstable nature of agricultural income. Farmers face seasonal fluctuations in crop yields, high input costs, unpredictable weather conditions, and risks associated with crop failure. These challenges make it difficult for farmers to sustain themselves on crop income alone, which, in most cases, is seasonal and comes with inherent uncertainties (Basu & Das, 2018). Day-to-day consumption expenses, labor costs, and agricultural investments, such as seeds, fertilizers, and irrigation, create significant financial pressure, leading farmers to rely heavily on credit to manage their livelihoods (Singh, 2019). In this context, loans serve as critical financial tools that enable farmers to meet both their short-term and long-term needs, from daily sustenance to investments in future crop cycles.

The Role of Institutional Loans in Agriculture

Institutional credit, mainly provided by banks, cooperatives, and government-supported schemes, has been widely promoted as a sustainable solution to the financial problems faced by farmers. Institutions like the National Bank for Agriculture and Rural Development (NABARD) and state-run banks have introduced several initiatives aimed at increasing the availability of credit to farmers (Rathore & Sharma, 2017). One of the central arguments for supporting institutional loans is that they offer more favorable terms, including lower interest rates, extended repayment periods, and structured loan products designed specifically for agricultural needs (Rao et al., 2020).

Moreover, institutional credit is often supported by government subsidies and insurance schemes that protect farmers from financial devastation in case of crop failures or other unforeseen events. These loans can also encourage capital formation in agriculture by allowing farmers to invest in new technologies, mechanization, or more resilient crop varieties (Shah et al., 2015). Such investments are necessary for enhancing productivity and reducing the risk of financial distress due to volatile agricultural conditions. However, despite these apparent advantages, access to institutional credit remains uneven, particularly in rural areas where many farmers either lack awareness of the available schemes or face bureaucratic barriers in accessing such loans.

The Persistence of Non-Institutional Loans

Despite concerted government efforts to increase institutional credit access, non-institutional loans—often provided by moneylenders, traders, or relatives—continue to dominate the rural credit market, especially in states like Madhya Pradesh (Banerjee & Duflo, 2018). Studies have shown that the ease of access to non-institutional credit, along with the

flexibility in repayment and the absence of stringent collateral requirements, make these loans particularly attractive to small and marginal farmers (Bhaduri, 2021). In contrast to formal banking institutions, which often require a lengthy documentation process and impose strict eligibility criteria, non-institutional lenders operate through informal networks based on personal relationships, which enables farmers to secure loans quickly and without much paperwork (Srinivasulu, 2016).

The informal nature of these credit arrangements also allows for more adaptive repayment schedules, often based on the farmer's crop cycle or personal needs, making non-institutional loans a more convenient option for those in immediate need of cash (Shah, 2018). However, this convenience comes at a cost: non-institutional lenders typically charge exorbitant interest rates, which can trap farmers in cycles of debt, thereby exacerbating their financial vulnerabilities (Kumar et al., 2019). The persistence of these credit sources indicates that despite the increased outreach of institutional credit, non-institutional lending fills a crucial gap in meeting farmers' urgent and short-term financial needs. This paradox raises important questions about the effectiveness of institutional financial interventions in rural India.

The Need for a Comparative Study

While a significant body of literature has discussed the financial challenges faced by Indian farmers and the role of credit in agriculture, there remains a noticeable gap in understanding the long-term shifts in the sources of loans, particularly in a region like Madhya Pradesh. Studies have predominantly focused on either institutional or non-institutional loans without a comprehensive analysis of how the dynamics between these two sources have changed over time (Singh & Patel, 2019). The period between 2002-03 and 2018-19 saw numerous policy changes aimed at increasing institutional credit access, including the expansion of Kisan Credit Card (KCC) schemes, interest subventions, and debt waiver programs (Rathore & Sharma, 2017). However, the extent to which these policies have shifted farmers' preferences away from non-institutional lenders remains understudied.

This study seeks to fill this gap by tracing the shift in the sources of farmer loans in Madhya Pradesh over the period from 2002-03 to 2018-19. By analyzing data on loan uptake, sources of credit, and the socioeconomic profiles of farmers, this research aims to provide a nuanced understanding of the factors influencing credit choices in agriculture. Moreover, it will explore the reasons behind the continued reliance on non-institutional loans, despite increased efforts to expand institutional credit access. Understanding these dynamics is crucial for policymakers, financial institutions, and agricultural stakeholders to design more effective interventions that can address the credit needs of farmers in a sustainable and equitable manner.

The shifting landscape of agricultural credit in Madhya Pradesh calls for a thorough examination of the evolving roles of institutional and non-institutional loans. By providing insights into the preferences and challenges faced by farmers in accessing credit, this study aims to contribute to the broader discourse on rural financial inclusion and agricultural sustainability. A deeper understanding of these trends can help shape future policies aimed at improving credit access and alleviating the financial stress faced by farmers.

2. LITERATURE REVIEW

The rural credit market plays a pivotal role in agricultural economies, particularly in regions like Madhya Pradesh, where farming is the primary livelihood for a significant portion of the population. The nature of credit access and usage in agriculture is influenced by various factors, including the availability of institutional credit sources like commercial banks, cooperative banks, and the persistence of non-institutional sources such as moneylenders and relatives. This literature review explores major studies on rural credit markets, focusing on the advantages and disadvantages of both institutional and non-institutional loan sources

Institutional Credit Sources in Agriculture

Institutional credit is often regarded as a more secure and structured form of financing for farmers. Banks, cooperative societies, and government programs play a significant role in providing credit to agricultural workers. According to Rao, Reddy, and Swaminathan (2020), institutional loans offer several benefits, including lower interest rates, formalized repayment structures, and access to insurance schemes. The role of public sector banks in agricultural credit has been especially emphasized in policy discourses since the Green Revolution, as these banks were considered key to enhancing agricultural productivity through the availability of affordable credit (Shah et al., 2015).

Cooperative banks have also been an important part of the rural financial system in India. These banks are considered to be more accessible to small and marginal farmers due to their proximity to rural areas and their focus on providing financial services tailored to the agricultural sector (Rathore & Sharma, 2017). Despite these advantages, studies such as Singh and Patel (2019) have identified several challenges in the institutional credit system, including bureaucratic inefficiencies, delays in loan processing, and the exclusion of smallholder farmers who often lack the necessary documentation or collateral to qualify for loans.

One of the most successful institutional credit interventions has been the Kisan Credit Card (KCC) scheme, which has improved access to credit for many farmers. However, Kumar, Singh, and Pandey (2019) highlight that the KCC scheme has been largely ineffective in addressing the credit needs of marginal and tenant farmers due to issues related to land ownership and collateral requirements. Moreover, while institutional credit has increased over the years, many farmers in Madhya Pradesh continue to rely on non-institutional credit sources.

Non-Institutional Credit Sources

Non-institutional credit sources, including moneylenders, traders, and relatives, have long been a feature of the rural credit market in India. Studies by Banerjee and Duflo (2018) show that these credit sources persist due to their ease of access and flexibility, particularly in regions where formal financial institutions are less accessible. Moneylenders, for instance, provide credit without requiring collateral or lengthy paperwork, making them an attractive option for farmers who need quick access to funds. However, Bhaduri (2021) emphasizes the high-interest rates charged by moneylenders, which often lead to cycles of indebtedness and financial distress for farmers.

The informal relationships that underpin non-institutional credit also play a crucial role in rural credit dynamics. According to Srinivasulu (2016), farmers often prefer borrowing from relatives or local traders due to the trust and flexibility inherent in these informal arrangements. These lenders do not typically impose strict repayment schedules, allowing farmers to repay their loans based on crop yields or other personal circumstances. However, this informality can also work against the borrower, as non-institutional lenders often operate outside of any regulatory framework, leaving farmers vulnerable to exploitation.

Comparative Advantages and Disadvantages

A comparative analysis of institutional and non-institutional credit sources reveals both benefits and limitations in each case. Institutional credit sources, though offering lower interest rates and structured repayment plans, are often inaccessible to small and marginal farmers due to bureaucratic hurdles and stringent collateral requirements (Shah, 2018). In contrast, non-institutional lenders provide quick, flexible credit without these formal requirements, but at much higher costs, contributing to long-term financial instability for many borrowers (Bhaduri, 2021).

The persistence of non-institutional credit sources highlights the gaps in the rural credit infrastructure, especially for smallholder and marginalized farmers. While institutional credit offers a pathway to more sustainable farming practices through lower interest rates and access to government schemes, it has failed to entirely replace the informal credit system. This highlights the need for a more nuanced understanding of the rural credit market, particularly in regions like Madhya Pradesh, where institutional credit penetration remains uneven (Rao et al., 2020).

Gaps in the Literature and Contribution of Current Research

Despite extensive research on rural credit, there is limited literature that traces the longitudinal shifts in the sources of credit for farmers, particularly in Madhya Pradesh. Most existing studies either focus on institutional or non-institutional credit in isolation, without adequately addressing the interplay between these two types of credit over time. Studies such as Rathore and Sharma (2017) provide valuable insights into institutional credit growth but do not delve deeply into the reasons behind the continued reliance on non-institutional sources.

This research aims to fill this gap by providing a comprehensive analysis of the shifts in farmer credit choices over a 17-year period. By examining the factors that have influenced farmers' preferences for institutional versus non-institutional loans, this study will offer valuable insights into the effectiveness of credit policies and interventions introduced during this period. It will also explore the socioeconomic conditions that have led to the continued prevalence of non-institutional credit in rural Madhya Pradesh.

Objective of The study

1. To analyze the relationship between farmers' income growth and their access to loans, focusing on loan outstanding amounts and borrowing patterns across different land sizes.
2. To evaluate the changes in the distribution of institutional and non-institutional loan sources among Madhya Pradesh farmers across various landholding categories between 2002-03 and 2018-19.
3. To investigate trends in interest rates and loan shares among institutional and non-institutional sources

3. RESEARCH METHODOLOGY OF THE STUDY

This study utilizes quantitative methods to analyze shifts in farmer loan sources in Madhya Pradesh from 2002-03 to 2018-19, leveraging data from the National Sample Survey Office's (NSSO) Situation Assessment Survey (SAS) of Farmer Households. Data from the 59th Round (2003) and the 77th Round (2019) of the SAS provide the foundation for examining changes in institutional and non-institutional credit sources. Each round provides detailed data on economic activities, indebtedness, and loan sources specific to rural farmer households.

To ensure consistent comparisons, data harmonization is undertaken. Loan sources from both rounds are consolidated into two broad categories: institutional and non-institutional. Institutional sources encompass formal lenders such as government institutions, banks, and cooperative societies. Non-institutional sources include informal lenders like moneylenders, traders, and family connections. This harmonization enables the analysis of shifts in credit accessibility across the two periods while addressing discrepancies in the classification of loan providers between rounds.

The methodology involves categorizing all loan observations based on the source type (institutional or non-institutional), facilitating a clear comparison of the relative prevalence of each type over time. Trend analysis is then applied to identify shifts in credit distribution, particularly examining the evolving role of banks, cooperatives, and informal lenders. Adjustments are made to account for inflation using the Consumer Price Index (CPI), with 2016-17 as the base year, ensuring all financial data are comparable in real terms.

Furthermore, adjustments are made to accommodate differences in household definitions between the survey rounds. Despite these methodological challenges, the study achieves a cohesive macro-level analysis of credit dynamics for farmer households in Madhya Pradesh, highlighting key trends over the 16-year period.

4. ANALYSIS OF THE STUDY

Landholding Patterns and Credit Accessibility Among Farmers

As per Table 1, there has been a noticeable increase in the average annual income across all landholding categories of farmer households in Madhya Pradesh from 2002-03 to 2018-19. Marginal farmers (< 1 acre) saw a rise in income from ₹42,250 to ₹59,338, small farmers (1-1.99 acres) from ₹36,855 to ₹58,308, medium farmers (2-4.99 acres) from ₹31,884 to ₹87,205, and large farmers (≥ 5 acres) experienced the most significant increase, from ₹82,227 to ₹173,391. This trend demonstrates that larger landholders generally achieved higher income growth, likely benefiting from economies of scale and increased access to resources. Studies suggest that larger holdings can more effectively utilize mechanization and access to financial services, leading to improved productivity and income levels (Chand & Prasanna, 2016). The findings align with research indicating a positive correlation between land size and income in Indian agriculture.

Table1.Madhya Pradesh Farmers' Income and Credit accessibility Patterns by Landholding Size (2002-03 vs. 2018-19)

Year	Farmer Category	Farmer Households	Average Annual Income (₹)	% Loanee Households	% Institutional Loan Recipients	% Non-Institutional Loan Recipients	Average Loan Outstanding (₹)
2002-03	Marginal(< 1 Acre)	1,010,927	42,250	35.8	11.1	26.9	28,990
	Small (1-1.99 Acre)	1,234,756	36,855	46.1	21.0	32.1	36,465
	Medium (2-4.99 Acre)	2,253,730	31,884	51.6	29.4	31.0	68,855
	Large (5 Acre & more)	1,821,185	82,227	61.4	46.4	29.5	119,537
	Overall	6,320,598	49,019	50.8	29.7	30.1	76,266
2018-19	Marginal(< 1 Acre)	1,327,016	59,338	36.1	21.3	22.9	88,668
	Small (1-1.99 Acre)	2,297,263	58,308	40.7	24.4	28.3	77,029
	Medium (2-4.99 Acre)	2,450,997	87,205	52.2	40.6	26.3	142,295
	Large (5 Acre & more)	1,198,483	173,391	68.8	61.6	22.7	270,349
	Overall	7,273,759	87,195	48.4	35.4	25.7	147,627

The results presented in this table are calculated by the authors using unit-level data from the NSSO 59th Round (Situation Assessment Survey, 2002-03) and the NSSO 77th Round (Situation Assessment Survey, 2018-19). The data are estimated in Indian Rupees (₹), adjusted to constant 2016-17 prices.

The percentage of loanee households also varied by land size, with marginal farmers maintaining a consistent level around 36%, while large farmers saw a substantial increase from 61.4% in 2002-03 to 68.8% in 2018-19. This rise among larger farmers is linked to the increase in institutional loans, with institutional loan recipients in the large farmer category rising from 46.4% to 61.6%. For marginal and small farmers, institutional access improved modestly, indicating a persistent reliance on non-institutional credit, though with a slight decline in non-institutional borrowers among smaller categories. The trend reflects challenges smaller landholders face in accessing formal credit, partly due to perceived credit risk and lower collateral (Ghosh et al., 2017).

Average loan amounts increased significantly across all categories, most notably for large farmers, whose average outstanding loans rose from ₹119,537 to ₹270,349. Medium and small farmers also saw their loan amounts more than double. This suggests an expanded reliance on credit for operational costs and investments, with high-income farmers accessing larger institutional loans, while smaller farmers still rely relatively more on informal credit, possibly exacerbating debt burdens in lower-income groups (Kumar & Mishra, 2018).

These patterns reveal that while larger farmers benefit from expanded institutional access and income growth, smaller farmers' limited credit options and higher reliance on non-institutional sources may constrain their income gains. This trend emphasizes the importance of targeted agricultural policies to improve credit access for marginal and small farmers, ensuring equitable growth across landholding categories and supporting the research objective of examining how loan accessibility impacts income growth and indebtedness in Madhya Pradesh's agricultural sector.

Institutional and Non-Institutional Loans proportion in Madhya Pradesh

As per Table 2, the distribution of institutional and non-institutional loans among Madhya Pradesh farmers has shifted significantly across landholding categories between 2002-03 and 2018-19. Average institutional loan amounts have increased across all landholding categories, with marginal farmers' institutional loans rising from ₹8,347 to ₹33,175 and large farmers from ₹77,488 to ₹223,605. Conversely, non-institutional loan amounts also grew, though at a slower rate, particularly for larger farmers, indicating an increasing reliance on institutional credit among this group. This aligns with research showing that larger landholders often receive more substantial institutional support due to better collateral and perceived creditworthiness (Rao & Dev, 2017).

Table 2: Changes in Institutional and Non-Institutional Loan Rates and Amounts Among Madhya Pradesh Farmers by Land Size (2002-03 and 2018-19)

Year	Farmer Category	Avg Inst. Loan	Inst. Loan Rate	Avg Non-Inst. Loan	Non-Inst. Loan Rate	Proportion Inst. Loan
2002-03	Marginal(< 1 Acre)	8,347	16.0	20,643	27.2	28.8
	Small (1-1.99 Acre)	10,839	21.7	25,626	34.5	29.7
	Medium (2-4.99 Acre)	37,433	14.7	31,421	29.7	54.4
	Large (5 Acre & more)	77,488	15.2	42,049	28.7	64.8
	Overall	43,387	15.4	32,879	29.8	56.9
2018-19	Marginal(< 1 Acre)	33,175	10.1	55,493	24.5	37.4
	Small (1-1.99 Acre)	40,066	9.6	36,963	22.1	52.0
	Medium (2-4.99 Acre)	99,884	8.4	42,410	23.9	70.2
	Large (5 Acre & more)	223,605	7.6	46,744	23.9	82.7
	Overall	103,867	8.2	43,760	23.6	70.4

The results presented in this table are estimated by the authors using unit-level data from the NSSO 59th Round (Situation Assessment Survey, 2002-03) and the NSSO 77th Round (Situation Assessment Survey, 2018-19). The data are estimated in Indian Rupees (₹), adjusted to constant 2016-17 prices.

The rates of institutional loan uptake, however, declined across all categories, with the most notable drop for large farmers, from 15.2% to 7.6%. This shift suggests that while institutional loan amounts increased, fewer farmers across all land sizes may be taking institutional loans, possibly due to higher loan eligibility requirements and procedural complexities (Sharma, 2018). In contrast, non-institutional loan rates remained relatively high, with smaller farmers, especially, showing a consistent preference for non-institutional sources, likely driven by factors such as ease of access and flexibility in repayment (Patil & Chandrakanth, 2016).

Notably, the proportion of institutional loans across categories has increased significantly, from 56.9% in 2002-03 to 70.4% in 2018-19 overall, reflecting a growing reliance on formal credit sources, particularly among larger farmers (82.7% for large farmers in 2018-19). For small and marginal farmers, however, while the proportion of institutional loans has increased, non-institutional loans still represent a substantial share. This indicates that while formal credit options are expanding, barriers to access persist for smaller landholders, potentially due to collateral limitations and rigid loan requirements from institutional lenders (Kumar et al., 2018).

These trends support the study's objective of evaluating the shift in loan source distribution, highlighting a clear transition towards institutional credit for larger farmers, which is correlated with higher average loan amounts and income levels. Conversely, smaller landholders' continued reliance on non-institutional sources reflects structural

challenges in the formal credit market. This underscores the need for policy interventions to improve credit accessibility for marginal farmers, ensuring equitable access to institutional loans across landholding sizes.

Trends in Loan pattern

In Madhya Pradesh, the total loan disbursement in 2002-03 amounted to ₹24,507.05 crore, allocated across 51.84 lakh loans and impacting 41.82 lakh farmer households. By 2018-19, the total loan disbursed had more than doubled to ₹51,924.30 crore, with 52.50 lakh loans distributed among 47.73 lakh farmer families. This increase underscores not only a rise in loan accessibility but also the evolving financial needs and dependencies within rural households over the 16-year period.

For this study, credit sources are classified into institutional and non-institutional categories, reflecting both the formal and informal financial landscapes. Institutional sources encompass loans from the government, cooperative banks, and banks, including commercial and rural banks as well as self-help groups (SHGs) or joint liability groups (JLGs) linked to banking institutions. These formal sources play a critical role in providing regulated credit options for rural farmers. Non-institutional sources, however, represent informal lending channels, comprising loans from agricultural or professional moneylenders, traders, personal networks such as relatives and friends, and other miscellaneous sources like chit funds and landlords. These informal sources often have distinct lending terms and may cater to different needs and risks perceived by smaller landholders.

It is important to note that the categorization of loan sources in the two survey rounds—the NSSO's 59th Round (2002-03) and 77th Round (2018-19)—varies slightly. For comparative purposes, this study harmonizes these categories to create consistent classifications, though minor discrepancies may persist due to differing source definitions and grouping practices across the two rounds. This categorization and harmonization are essential for evaluating shifts in the distribution and nature of institutional versus non-institutional loan sources among Madhya Pradesh farmers, thereby supporting the objective of analyzing credit access trends and their implications for agricultural policy.

Institutional Loan Pattern

Between 2002-03 and 2018-19, institutional loan sources in Madhya Pradesh show a notable decline in average interest rates, especially for cooperative banks and government loans. Government loan interest rates decreased significantly from 24.4% in 2002-03 to 13.2% in 2018-19, while cooperative banks saw the most pronounced reduction from 16.5% to 5.2%. Commercial banks also reduced their average interest rate from 14.4% to 8.2%. Overall, the average institutional loan interest rate dropped from 15.4% to 8.2%, likely reflecting improved policy measures to facilitate agricultural credit, including interest subsidies and targeted lending programs, as highlighted by studies on agricultural finance reform (Patnaik & Shah, 2017).

Table 3: Institutional Loan Patterns: Source-Wise Interest Rates and Loan Shares Among Madhya Pradesh Farmers (2002-03 vs. 2018-19)

Year	Loan Source	Avg. Interest Paid (%)	Loan Share (%)	Loan Number Share (%)	Person Share (%)
2002-03	Government	24.4	1.9	2.4	2.8
	Co-operative Bank	16.5	16.9	27.2	28.8
	Bank	14.4	38.1	14.7	17.6
	All Institutional Loan	15.4	56.9	44.3	49.2
2018-19	Government	13.2	4.5	9.8	8.9
	Co-operative Bank	5.2	8.2	12.6	13.6
	Bank	8.2	57.7	35.0	35.7
	All Institutional Loan	8.2	70.4	57.4	58.2

The results are estimated by the author using unit-level data from the NSSO 59th Round (Situation Assessment Survey, 2002-03) and the NSSO 77th Round (Situation Assessment Survey, 2018-19).

The loan share percentage of banks rose significantly, from 38.1% in 2002-03 to 57.7% in 2018-19, suggesting an increased preference for bank loans among farmers. This shift reflects the growing accessibility and perceived reliability of banks as institutional lenders, a trend supported by efforts to expand formal banking infrastructure in rural areas (Chakrabarti, 2016). Conversely, the share of cooperative banks declined from 16.9% to 8.2%, indicating a shift in preference or potential capacity constraints within cooperatives. Government loan sources, although still limited in overall share, increased from 1.9% to 4.5%, signaling a growing reliance on government schemes for agricultural credit.

The loan number share and person share also show an increased role for banks, with bank loans accounting for 35% of all institutional loans by number in 2018-19, up from 14.7% in 2002-03. This growing share highlights the shifting distribution within institutional loans, driven by both policy support for bank lending to agriculture and increased farmer awareness of banking options. The overall share of institutional loans expanded from 56.9% in 2002-03 to 70.4% in 2018-19, emphasizing a clear transition towards formalized credit sources for farmers across Madhya Pradesh.

Non Institutional Loan Pattern

Non-institutional loan sources exhibit a notable decrease in average interest rates across several categories, with rates from traders dropping from 29.2% to 22.6% and rates from moneylenders decreasing slightly from 31.0% to 27.1%. This reduction in non-institutional rates may reflect increased competition from institutional sources or government interventions aimed at lowering informal lending costs. However, agricultural/professional moneylenders remain a prominent source, accounting for the highest non-institutional loan share (22%) in 2018-19, compared to 22.6% in 2002-03.

Table 4: Non-Institutional Loan Patterns: Source-Wise Interest Rates and Loan Shares Among Madhya Pradesh Farmers (2002-03 vs. 2018-19)

Year	Loan Source	Avg. Interest Paid (%)	Loan Share (%)	Loan Number Share (%)	Person Share (%)
2002-03	Relatives & Friends	27.7	10.1	13.6	12.8
	Trader	29.2	9.5	21.1	18.9
	Agricultural/Professional Moneylender	31.0	22.6	18.4	16.8
	Others	25.5	0.8	2.6	2.4
	All Non-Institutional Loan	29.7	43.0	55.7	50.9
			0.0	0.0	0.0
2018-19	Relatives & Friends	0.0	2.2	7.1	7.4
	Trader	22.6	1.9	4.3	4.7
	Agricultural/Professional Moneylender	27.1	22.0	25.2	24.3
	Others	16.9	3.6	6.1	5.5
	All Non-Institutional Loan	23.6	29.7	42.7	41.9
The results are estimated by the author using unit-level data from the NSSO 59th Round (Situation Assessment Survey, 2002-03) and the NSSO 77th Round (Situation Assessment Survey, 2018-19).					

The loan share of friends and relatives decreased from 10.1% in 2002-03 to 2.2% in 2018-19, while traders' share declined from 9.5% to 1.9%, indicating a significant reduction in farmer reliance on these informal networks. This decline is likely due to the gradual shift towards formal credit sources as they become more accessible, as well as initiatives to reduce exploitative practices in informal lending (Deshpande et al., 2018).

The loan number and person shares reflect this shift, with the number share of non-institutional loans declining from 55.7% to 42.7%, and the person share decreasing from 50.9% to 41.9% over the period. This transition demonstrates a gradual move away from high-cost, informal credit sources as institutional options become more viable, though moneylenders continue to serve as a key lender for specific farmer segments, especially those who face access barriers to institutional credit (Kumar & Singh, 2019).

Overall, Tables 3 and 4 underscore a broad shift from non-institutional to institutional credit among farmers in Madhya Pradesh, reflected in both the declining interest rates and the increasing loan share of institutional sources. This trend supports the study's objective of investigating the changing interest rates and loan share distribution, which indicates improved institutional accessibility, competitive interest rates, and policy measures aimed at supporting rural credit. The decline in reliance on non-institutional loans reflects a positive impact of expanded banking infrastructure and policy interventions aimed at reducing informal lending dependency among farmers. This shift towards formal lending sources aligns with the objectives of financial inclusion policies in rural India, which advocate for greater credit availability through institutional channels to support agricultural productivity and financial stability among smallholder farmers.

5. MAJOR FINDINGS OF THE STUDY

This study highlights significant changes in credit patterns among Madhya Pradesh farmers from 2002-03 to 2018-19, reflecting shifts in loan accessibility, borrowing behavior, and interest rates across institutional and non-institutional sources.

- 1. Income Growth and Loan Patterns:** Across landholding categories, farmer incomes grew notably, with large landholders experiencing the highest growth.

This increase in income paralleled a greater reliance on institutional loans, particularly among larger farmers who benefited from lower interest rates and improved access. Average loan amounts and loan outstanding also rose, indicating increased borrowing across all farmer categories.

- 2. Shift in Loan Source Distribution:** There was a clear shift towards institutional loans, with the share of loans from institutional sources increasing from 56.9% in 2002-03 to 70.4% in 2018-19. This trend was particularly prominent among larger farmers, who could leverage their land and assets to access lower-cost institutional credit, while marginal and small farmers continued to rely more heavily on non-institutional sources, albeit with a declining trend in non-institutional loan reliance.

- 3. Interest Rate Trends:** Average interest rates for institutional loans declined across all sources, with government loans and cooperative banks seeing the most substantial reductions.

These lower rates align with policy efforts to make institutional credit more affordable and accessible to farmers. Conversely, non-institutional sources, though still widely used, demonstrated only a moderate decline in interest rates, particularly from traders and moneylenders, which remain relatively high compared to institutional sources.

- 4. Reduced Dependency on Non-Institutional Sources:** The percentage of loans from non-institutional sources decreased, indicating a gradual transition to more formalized credit.

This shift is consistent with efforts to expand institutional credit accessibility in rural areas and reduce informal lending dependency. Nonetheless, professional moneylenders maintained a high share within non-institutional loans, signifying ongoing challenges in bridging the credit access gap for smaller and more vulnerable farmers.

Policy Suggestions to Encourage Institutional Credit for Farmers

- 1. Strengthening Cooperative and Rural Banking Infrastructure:** Cooperative banks and rural banks play a crucial role in reaching marginal and small farmers. Policies should focus on strengthening these institutions through increased capital infusion, better risk management practices, and incentives to encourage lending to smaller landholders who lack traditional collateral. This can help cooperative banks regain their share and serve underserved farmer segments.

- 2. Tailoring Credit Products for Small Farmers:** Customized loan products that address the unique needs of small and marginal farmers, such as seasonal credit options, low collateral requirements, and simplified application processes, could enhance institutional access for these groups. Encouraging partnerships with self-help groups (SHGs) and joint liability groups (JLGs) can facilitate greater outreach to farmers who face barriers in obtaining institutional credit.

- 3. Interest Rate Subsidies and Credit Guarantees:** Expanding interest rate subsidy programs and implementing targeted credit guarantees can help offset the risk perceptions associated with lending to smallholder farmers.

These programs can be enhanced with regular monitoring to ensure subsidies effectively lower borrowing costs for those in need and encourage lenders to engage more actively in agricultural financing.

- 4. Enhanced Financial Literacy Programs:** Many farmers, especially those reliant on non-institutional sources, may lack adequate financial literacy to access and navigate formal credit systems.

Government and NGOs should enhance outreach programs focusing on financial education, helping farmers understand the benefits of institutional credit over informal options and guiding them on eligibility requirements and application processes.

- 5. Digitization and Technological Interventions:** Technology can streamline lending processes and make institutional credit more accessible to rural farmers. Mobile banking and digital platforms could facilitate loan applications, disbursements, and repayments, especially in remote areas. Technology also enables data collection and risk assessment, making it easier for banks to evaluate borrowers with limited credit history.

By implementing these policy suggestions, Madhya Pradesh can better support smallholder farmers, promote equitable access to credit, and reduce dependency on costly non-institutional loans, fostering a more resilient and sustainable agricultural finance landscape.

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