# Credit choices in agriculture: tracing the shift in farmer loan sources in Bihar (2002-19)

**Dr. Ajad Singh[1*] and Dr. Mukesh Kumar[1]**

[1] Associate Professor, Department of Economics, Motilal Nehru College, University of Delhi, New Delhi, India

Correspondence Author: Dr. Ajad Singh

Received 2 May 2024; Accepted 5 Jun 2024; Published 14 June 2024

**Abstract**

This study examines the transformation in credit access among Bihar's farmers over nearly two decades. Using data from the 59th (2002-03) and 77th (2018-19) rounds of the Situation Assessment Survey (SAS) of Farmer Households by NSSO, this paper investigates shifts in borrowing patterns, the role of institutional and non-institutional credit sources, and trends in interest rates across various landholding categories.

The analysis reveals a growing reliance on institutional loans, with significant increases in loan amounts, particularly among medium and large farmers, indicating improved accessibility to formal credit sources. Institutional loan interest rates declined, making borrowing more affordable, driven in part by government initiatives like the Kisan Credit Card. In contrast, non-institutional loans saw slower growth, and their interest rates remained substantially higher, especially for smaller farmers relying on informal sources like moneylenders.

The study highlights a shift in credit preferences towards institutional sources, accompanied by a decline in non-institutional credit reliance. These findings suggest that policy measures have had a positive impact on formal credit access in Bihar's agricultural sector, although challenges remain for small and marginal farmers, particularly in accessing affordable loans. The study underscores the need for further reforms to ensure equitable credit distribution and support for smallholders.

**Keywords:** Institutional loans, Non-institutional loans, Credit accessibility, Farmer borrowing patterns, Loan interest rates, Bihar farmer, Money lender

## Introduction

Agriculture plays a pivotal role in the Indian economy, providing livelihoods for a large portion of the population, particularly in rural areas. Bihar, one of India's poorest and most agriculturally dependent states, is no exception. Over the past two decades, farmers in Bihar have consistently faced significant financial challenges due to a combination of low and fluctuating agricultural incomes, high input costs, and the ever-present risk of crop failures. These factors make access to credit a crucial necessity for farmers, enabling them to invest in seeds, fertilizers, and other essential agricultural inputs. Loans provide a buffer against income instability and help mitigate the impacts of adverse weather conditions, fluctuating market prices, and other risks inherent in agriculture (NABARD, 2018) [5].

In rural India, and particularly in Bihar, the need for institutional credit to support agricultural activities has been a long-standing concern. Scholars such as Ray (2007) [10] and Rajeev and Bhattacharjee (2013) [8] have underscored the necessity of formal financial institutions in providing credit to farmers to ensure sustainable agricultural growth. Institutional loans, primarily provided by banks and cooperatives, are often promoted by policymakers as they offer regulated interest rates, longer repayment periods, and are supported by government subsidies. Programs such as the Priority Sector Lending (PSL) mandate and the Kisan Credit Card (KCC) scheme have been specifically designed to ease farmers' access to credit through formal channels (Government of India, 2007) [4]. These efforts highlight the government's recognition of the role that institutional credit plays in promoting agricultural development and alleviating farmer indebtedness.

However, despite these efforts, a substantial portion of farmers, especially small and marginal farmers in Bihar, continue to rely on non-institutional credit sources, such as moneylenders, traders, and informal networks. According to studies like those by Bell (1990) [3] and Sharma (2017) [11], non-institutional loans have remained deeply entrenched in rural credit markets, even with the expansion of institutional credit access. One of the primary reasons for this persistence is the ease of access that non-institutional lenders provide. Unlike banks, which often require lengthy paperwork, formal identification, and land as collateral, moneylenders and traders offer quick loans with minimal bureaucratic procedures (Bhaduri, 1977) [2]. In the context of Bihar, where a significant percentage of farmers either do not own formal land titles or possess only small landholdings, this ease of access makes non-institutional credit attractive, despite the high interest rates (Ray, 2007) [10].

The informal relationships and trust between lenders and borrowers also play a crucial role in the continued reliance on non-institutional loans. Many rural borrowers have long-standing relationships with moneylenders or traders, which provide them with a sense of security and flexibility in repayment terms. The flexibility of non-institutional loans, which often allows for rescheduling payments based on crop cycles and local economic conditions, is a feature that institutional loans, bound by more rigid repayment schedules, often lack (Sharma, 2017) [11]. Moreover, the lack of stringent collateral requirements is another factor that drives farmers, particularly smallholders, towards informal lenders, as institutional credit typically demands formal proof of assets, which many farmers in Bihar do not possess (Rao, 2016) [9].

While a great deal of literature exists on the importance of both institutional and non-institutional loans in rural India, the comparative analysis of the shift in these credit sources over time remains an under-explored area. Studies like those by Banerjee and Duflo (2011) [1] have emphasized the evolving dynamics of rural credit markets but often do not provide an in-depth, region-specific analysis. This is particularly true for Bihar, where the agricultural economy has seen significant changes between 2002 and 2019, a period marked by fluctuating agricultural policies, varying monsoon patterns, and economic reforms. Understanding the shifting preferences of farmers between institutional and non-institutional loans during this period is crucial for several reasons. First, it provides insights into how government policies, like the Kisan Credit Card scheme, have impacted farmers' loan choices. Second, it highlights the factors driving farmers towards or away from institutional loans, whether due to systemic barriers, such as collateral requirements, or socio-economic factors, such as trust and local relationships. Third, it offers policymakers and financial institutions valuable data on the effectiveness of their outreach programs and identifies areas where further intervention is needed.

This study aims to fill the existing gap by tracing the shift in farmer loan sources in Bihar from 2002-03 to 2018-19. The research will compare the reliance on institutional versus non-institutional loans, analyze the socio-economic factors influencing farmers' choices, and assess the policy interventions aimed at improving credit access. In doing so, this study not only contributes to the existing literature on rural credit markets but also provides essential insights for policymakers and financial institutions working to improve the agricultural credit ecosystem in Bihar. As agriculture continues to be a cornerstone of the state's economy, understanding these dynamics is crucial for formulating strategies that can reduce farmers' dependency on high-interest non-institutional loans and promote sustainable agricultural development.

## Literature review

Rural credit markets play an indispensable role in sustaining agriculture, particularly for small and marginal farmers in regions like Bihar. Access to credit enables farmers to finance essential inputs, mitigate the risks associated with crop failure, and manage the cash flow requirements between sowing and harvesting seasons. Given the criticality of credit, understanding the dynamics of institutional and non-institutional loan sources is key to addressing agricultural development challenges in Bihar. This literature review examines the existing body of research on rural credit markets, focusing on the distribution of institutional and non-institutional loans, the variation in interest rates, and the role these credit sources play in the agricultural economy of Bihar. It also identifies gaps in the literature, positioning this study as a valuable contribution toward understanding the shift in loan sources among farmers from 2002 to 2019.

Institutional credit sources, such as banks, cooperative societies, and government-backed lending schemes, have long been promoted as ideal vehicles for supporting rural farmers. Studies like Rajeev and Bhattacharjee (2013) [8] highlight the importance of institutional credit in driving agricultural development, emphasizing that such credit offers lower interest rates, structured repayment periods, and government subsidies. Institutional loans, particularly those provided under the Kisan Credit Card (KCC) scheme, have been shown to improve farmers' ability to invest in modern farming technologies, thus boosting productivity and income. However, despite these advantages, non-institutional loans from moneylenders, relatives, and traders remain prominent in rural India, particularly in states like Bihar.

Sharma (2017) [11] underscores the persistence of non-institutional credit in rural India, attributing this to the easy accessibility, flexible terms, and lack of collateral requirements associated with informal lenders. Unlike institutional loans, non-institutional credit can be accessed quickly, often without the extensive paperwork or collateral demands that formal banking institutions require. In regions like Bihar, where landholdings are often fragmented or poorly documented, farmers find it challenging to secure institutional loans. This is a key reason why informal loans continue to dominate in certain areas, despite higher interest rates (Sharma, 2017) [11].

The distribution of institutional and non-institutional loans varies significantly across different landholding sizes. Bhaduri (1977) [2] argued that larger farmers are more likely to access institutional credit, as they typically have better land records and can provide the necessary collateral for loans. In contrast, small and marginal farmers—who form the majority in Bihar—often rely on non-institutional sources due to the lack of formal land titles and the flexibility that moneylenders offer. Bell (1990) [3] further elaborates that while institutional credit has increased in rural India, smallholder farmers still struggle to meet the stringent requirements set by banks, making them dependent on non-institutional loans. This trend is particularly pronounced in states like Bihar, where access to institutional loans is not evenly distributed across different agricultural communities.

The variation in interest rates between institutional and non-institutional sources is a critical factor influencing farmers' loan choices. Banerjee and Duflo (2011) [1] found that interest rates for non-institutional loans can be up to four times higher than those for institutional loans, yet the former remain popular due to their accessibility and flexible repayment options. Bhaduri (1977) [2] also pointed out that while institutional loans offer lower rates, the hidden transaction costs, such as time and bureaucratic hurdles, make them less appealing to small farmers. In contrast, moneylenders, despite charging exorbitant interest rates, provide immediate liquidity, which is often essential during peak agricultural seasons.

Moreover, Ray (2007) [10] observed that the share of non-institutional loans has remained relatively stable over time, particularly in rural Bihar, even as the government has promoted various institutional credit schemes. His research highlights the continued reliance on moneylenders in regions where financial institutions are sparse or where the bureaucratic process to obtain loans is perceived as overly complex and time-consuming. This disparity in loan shares and interest rates underscores the importance of understanding why non-institutional credit remains so entrenched despite government efforts to increase access to institutional credit.

Several studies have explored the relationship between farm income, growth, and credit access. For example, NABARD (2018) shows that access to institutional credit is positively correlated with farm income growth, as institutional loans enable farmers to invest in productivity-enhancing technologies. However, Ray (2007) [10] argues that non-institutional loans, despite their higher costs, often provide crucial support during periods of income instability or crop failure, serving as a safety net for vulnerable farmers. This suggests that while institutional credit is essential for long-term income growth, non-institutional loans play a complementary role by addressing immediate financial needs.

Between 2002 and 2019, there have been significant shifts in the distribution of loans between institutional and non-institutional sources. Rao (2016) [9] notes that while institutional credit has expanded due to government initiatives like the PSL mandate, informal loans have remained a key part of rural credit markets, particularly for marginalized farmers. The growing divergence in interest rates between these two sources has also been noted by Sharma (2017) [11], who points out that while institutional rates have remained relatively stable, the interest rates charged by non-institutional lenders have fluctuated depending on local economic conditions, further complicating the loan choice for farmers.

While the existing literature provides valuable insights into the functioning of rural credit markets, it often lacks a comprehensive analysis of the shifts in loan distribution and interest rate trends over time, particularly in the context of Bihar. Most studies focus on either institutional or non-institutional loans, but few provide a comparative analysis of the two, especially over an extended period like 2002-2019. Additionally, the socio-economic factors driving these shifts, such as changes in income levels, landholding sizes, and government policies, have not been adequately explored.

This study aims to fill these gaps by providing a longitudinal analysis of credit sources for farmers in Bihar from 2002 to 2019. It will examine how the distribution of institutional and non-institutional loans has evolved over this period, with a focus on interest rate trends and loan shares. Ultimately, this study will contribute to a deeper understanding of the challenges and opportunities in improving credit access for Bihar's farmers, providing actionable recommendations for fostering sustainable agricultural development.

**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 Bihar 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.

**Research methodology of the study**

This study aims to analyse the shifts in institutional and non-institutional loan sources for farmers in Bihar between 2002-03 and 2018-19, using data from two rounds of the Situation Assessment Survey (SAS) of Farmer Households, conducted by the National Sample Survey Office (NSSO). The data from these surveys, specifically the 59th Round (2002-03) and the 77th Round (2018-19), provide detailed information on the sources of credit utilized by farmer households, as well as insights into the financial challenges and opportunities they faced.

The 59th Round (2002-03), part of the larger 59th NSSO round, surveyed approximately 3,970 farmer families in Bihar, providing information on the standard of living, indebtedness, and access to loans. Loans were categorized into institutional sources, such as government loans, cooperative societies, and banks, and non-institutional sources, including moneylenders, traders, and relatives. The 77th Round (2018-19) surveyed 3,927 agricultural households in Bihar and provided a more detailed breakdown of credit sources, including scheduled commercial banks, regional rural banks, cooperative banks, and non-institutional lenders such as landlords, moneylenders, and market commission agents.

Given the differences in categorization between the two surveys, the data were harmonized by grouping similar loan providers into broader categories of institutional and non-institutional credit sources. This harmonization ensured consistency in the analysis, enabling a direct comparison of credit access and trends across both time periods. Institutional loans were grouped into categories like government-backed loans, cooperative banks, and commercial banks, while non-institutional loans included moneylenders, traders, and informal lenders like relatives.

The research methodology involved data cleaning and categorization of loan sources. Variables representing loan sources were adjusted to fit into the harmonized categories. Once the data were harmonized, the study analyzed trends in the distribution of credit, focusing on the shift from non-institutional to institutional sources. Special attention was given to interest rate trends, loan accessibility, and the growing role of government schemes and formal financial institutions in rural Bihar. Additionally, all income data were adjusted for inflation using the Consumer Price Index (CPI), ensuring that comparisons of nominal incomes between the two periods reflect real income changes.

This comparative analysis provides crucial insights into how the rural credit landscape has evolved over time, offering valuable information for policymakers, financial institutions, and development agencies working to improve access to credit for farmers in Bihar.

**Analysis of the study**

**Landholding patterns and credit accessibility among farmers**

As per Table 1, significant changes in average annual income across all landholding categories in Bihar between 2002-03 and 2018-19 reveal a positive relationship between income growth and land size. Marginal farmers (< 1 acre) experienced an increase in average annual income from ₹45,866 in 2002-03 to ₹67,176 in 2018-19, reflecting a modest rise. However, small farmers (1-1.99 acres) saw a more substantial growth from ₹54,555 to ₹84,800. Medium farmers (2-4.99 acres) witnessed an increase from ₹74,744 to ₹122,743, and large farmers (5 acres and more) experienced the most significant jump, with their incomes growing from ₹189,843 to ₹281,459. This trend underscores the persistent correlation between larger landholdings and higher income, with large farmers seeing more pronounced income growth compared to marginal and small farmers.

**Table 1:** Bihar 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) | 4,122,304 | 45,866 | 39.7 | 5.9 | 35.0 | 25,729 |
| | Small (1-1.99 Acre) | 1,307,959 | 54,555 | 28.6 | 8.0 | 21.2 | 37,086 |
| | Medium (2-4.99 Acre) | 1,245,318 | 74,744 | 21.7 | 10.9 | 11.8 | 78,237 |
| | Large (5 Acre & more) | 404,824 | 189,843 | 17.5 | 9.2 | 8.9 | 131,291 |
| | Overall | 7,080,406 | 60,782 | 33.2 | 7.4 | 26.9 | 36,741 |
| 2018-19 | Marginal (< 1 Acre) | 4,650,421 | 67,176 | 39.3 | 21.4 | 25.0 | 45,286 |
| | Small (1-1.99 Acre) | 1,478,750 | 84,800 | 38.9 | 25.7 | 20.1 | 54,721 |
| | Medium (2-4.99 Acre) | 734,570 | 122,743 | 41.0 | 31.4 | 16.8 | 97,099 |
| | Large (5 Acre & more) | 148,526 | 281,459 | 50.0 | 45.9 | 22.8 | 198,132 |
| | Overall | 7,012,267 | 81,252 | 39.7 | 23.9 | 23.1 | 56,933 |

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.

In terms of loan accessibility, the percentage of loanee households across all landholding categories increased over time, but the growth was more notable among medium and large farmers. The proportion of loanee households for marginal farmers remained stable (39.7% in 2002-03 compared to 39.3% in 2018-19), while small farmers saw a rise from 28.6% to 38.9%, and medium farmers increased from 21.7% to 41.0%. Large farmers showed the most substantial increase, with 50.0% of them taking loans by 2018-19, up from 17.5% in 2002-03. These figures indicate a growing reliance on credit, especially among medium and large farmers, reflecting improved access to loans.

Regarding the distribution of institutional and non-institutional loans, institutional loan recipients increased across all categories, indicating a gradual shift toward formal financial sources. Marginal farmers saw a rise in institutional loan uptake from 5.9% in 2002-03 to 21.4% in 2018-19, while small farmers moved from 8.0% to 25.7%, and medium farmers from 10.9% to 31.4%. Large farmers experienced the most significant shift, with 45.9% relying on institutional credit in 2018-19 compared to 9.2% in 2002-03. Conversely, reliance on non-institutional loans decreased, particularly among marginal and medium farmers. For example, the percentage of non-institutional loan recipients among marginal farmers dropped from 35.0% to 25.0% and among medium farmers from 11.8% to 16.8%.

Average loan amounts also showed substantial increases across all landholding sizes, aligning with the trend of income growth and greater loan accessibility. Marginal farmers saw their average loan outstanding rise from ₹25,729 in 2002-03 to ₹45,286 in 2018-19, while small farmers' average loans increased from ₹37,086 to ₹54,721. Medium farmers' loan amounts nearly doubled from ₹78,237 to ₹97,099, and large farmers' loans soared from ₹131,291 to ₹198,132. These increases suggest that, as incomes grew, farmers—especially those with larger landholdings—borrowed more, possibly to finance higher agricultural investments or expand their operations.

Overall, these trends in borrowing behavior indicate that access to institutional loans has improved, especially for larger landholders, likely contributing to their higher income growth. In contrast, marginal and small farmers still face significant barriers to accessing institutional credit, reflected in their continued reliance on non-institutional loans. This divergence in credit access has implications for income inequality and agricultural development in Bihar, as farmers with larger landholdings seem to benefit more from formal financial systems, while smaller farmers remain dependent on informal, often costlier, credit sources.

This analysis supports the research objective of examining the relationship between farmers' income growth, loan access, and indebtedness. It highlights the importance of addressing credit accessibility disparities for smaller farmers, a crucial step for policymakers aiming to foster inclusive agricultural growth in Bihar. The shift toward institutional loans for larger farmers also underscores the need for targeted interventions that can extend similar benefits to marginal and small farmers, thereby reducing their reliance on informal credit and enhancing their income potential.

**Institutional and non-institutional loans proportion in Bihar**

Table 2 presents a comparative analysis of institutional and non-institutional loan amounts and loan rates across different landholding categories among Bihar farmers between 2002-03 and 2018-19. The data highlights significant changes in the distribution and reliance on institutional versus non-institutional credit sources over this period, which aligns with the research objective of evaluating shifts in loan source distribution.

**Table 2:** Changes in institutional and non-institutional loan rates and amounts among Bihar 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) | 5,217 | 16.4 | 20,511 | 41.9 | 20.3 |
| | Small (1-1.99 Acre) | 19,103 | 13.3 | 17,983 | 36.8 | 51.5 |
| | Medium (2-4.99 Acre) | 50,270 | 12.2 | 27,966 | 32.7 | 64.3 |
| | Large (5 Acre & more) | 95,120 | 13.1 | 36,172 | 22.1 | 72.4 |
| | Overall | 15,304 | 13.6 | 21,437 | 38.8 | 41.7 |
| 2018-19 | Marginal (< 1 Acre) | 23,261 | 11.7 | 22,025 | 30.7 | 51.4 |
| | Small (1-1.99 Acre) | 33,608 | 10.7 | 21,113 | 30.6 | 61.4 |
| | Medium (2-4.99 Acre) | 68,095 | 9.0 | 29,004 | 16.3 | 70.1 |
| | Large (5 Acre & more) | 151,837 | 8.4 | 46,296 | 9.5 | 76.6 |
| | Overall | 33,694 | 10.5 | 23,240 | 27.6 | 59.2 |

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 average institutional loan amounts increased substantially across all landholding categories from 2002-03 to 2018-19. Marginal farmers saw their institutional loan amounts rise from ₹5,217 in 2002-03 to ₹23,261 in 2018-19, reflecting a growing reliance on formal credit sources. Similarly, small farmers experienced a jump in institutional loan amounts from ₹19,103 to ₹33,608, medium farmers from ₹50,270 to ₹68,095, and large farmers from ₹95,120 to ₹151,837. These increases indicate that institutional credit has become more accessible and substantial over time, particularly for medium and large farmers.

Non-institutional loan amounts also grew, but at a slower rate compared to institutional loans. For instance, marginal farmers' non-institutional loans increased modestly from ₹20,511 to ₹22,025, while for large farmers, the non-institutional loan amount rose from ₹36,172 to ₹46,296. The slower growth in non-institutional loans compared to institutional loans suggests a shifting preference toward formal sources, especially among larger landholders.

The loan rates for both institutional and non-institutional sources declined over time, though institutional loan rates dropped more significantly. Marginal farmers' institutional loan rates fell from 16.4% in 2002-03 to 11.7% in 2018-19, while small farmers' rates decreased from 13.3% to 10.7%. Medium and large farmers also benefited from declining institutional loan rates, with medium farmers seeing rates drop from 12.2% to 9.0% and large farmers from 13.1% to 8.4%. These reductions indicate an improvement in the affordability of institutional credit, likely driven by government policies aimed at supporting rural farmers.

Non-institutional loan rates also decreased, but they remained significantly higher than institutional loan rates, reinforcing the financial burden associated with informal borrowing. For example, marginal farmers saw non-institutional loan rates drop from 41.9% to 30.7%, while for large farmers, rates decreased from 22.1% to 9.5%. However, the persistence of relatively high rates among marginal and small farmers highlights ongoing challenges in their access to affordable credit.

A clear shift toward institutional loans is evident across all landholding categories. For marginal farmers, the proportion of institutional loans increased from 20.3% in 2002-03 to 51.4% in 2018-19, while for small farmers, this figure rose from 51.5% to 61.4%. Medium farmers experienced an increase from 64.3% to 70.1%, and large farmers saw institutional loan reliance grow from 72.4% to 76.6%. These figures suggest that farmers, regardless of land size, are increasingly turning to institutional credit sources, likely due to improved access, lower loan rates, and government-backed schemes such as the Kisan Credit Card (KCC).

The data reveals a notable shift in borrowing behaviour, with all landholding categories displaying a growing preference for institutional loans. For smaller landholders (marginal and small farmers), this trend is particularly significant, as their reliance on non-institutional sources has traditionally been higher due to easier access and fewer collateral requirements. The growing share of institutional loans indicates that efforts to increase formal credit access, such as through rural banks and microfinance institutions, are having a positive impact, especially for smallholder farmers.

For larger landholders, who have historically had better access to institutional credit, the continued increase in institutional loan amounts and decreasing loan rates reflect the benefits they reap from these formal financial systems. However, the fact that non-institutional loan rates remain relatively high for smaller landholders indicates that challenges persist, particularly in terms of making affordable formal credit accessible to all farmers.

The trends in Table 2 support the research objective of evaluating changes in the distribution of loan sources across landholding categories. The growing reliance on institutional loans, particularly among medium and large farmers, points to an increasing formalization of rural credit markets in Bihar. However, the slow decline in non-institutional loan rates and continued dependence on informal credit by marginal farmers suggest that targeted policies are still needed to improve financial inclusion for the most vulnerable farmers.

These insights highlight the need for agricultural policies that focus on expanding affordable institutional credit to smaller farmers while reducing their reliance on non-institutional loans, which carry higher interest rates. Improving the availability and accessibility of institutional credit for all landholding categories will be critical for fostering equitable income growth and reducing indebtedness in Bihar's agricultural sector.

**Institutional loan pattern**

Tables 3 and 4 provide a comparative analysis of interest rates, loan shares, and loan distribution patterns across institutional and non-institutional loan sources for Bihar farmers between 2002-03 and 2018-19. The total loan disbursed in Bihar in 2002-03 amounted to ₹8,641.587 crore, spread across 28.22 lakh loans and benefiting 24.96 lakh persons. By 2018-19, this figure rose significantly to ₹15,830.04 crore, covering 36.06 lakh loans and reaching 33.71 lakh individuals.

To analyse the changing landscape of rural credit, we have categorized loans into institutional and non-institutional sources. Institutional loans include three main categories: government loans (covering loans from government bodies, insurance companies, and other institutional agencies), cooperative banks (encompassing cooperative societies and banks), and loans from banks (including scheduled commercial banks, regional rural banks, and bank-linked self-help groups or joint liability groups). On the other hand, non-institutional loans are classified into loans from agricultural/professional moneylenders, traders, relatives and friends, and other informal sources like chit funds, landlords, and professionals.

It is important to note that the categories used in the 59th Round (2002-03) and the 77th Round (2018-19) are not identical. However, for the purposes of this study, we have harmonized these categories to allow for comparability. Despite our efforts, some limitations persist due to differences in the classification and grouping of loan sources across the two survey rounds.

Tables 3 and 4 thus provide insight into the trends in interest rates, loan shares, and borrower distribution for both institutional and non-institutional sources, helping to evaluate the evolving role of formal and informal credit in Bihar's agricultural sector.

**Table 3:** Institutional loan patterns: source-wise interest rates and loan shares among Bihar farmers (2002-03 vs. 2018-19)

| Year | Loan Source | Avg. Interest Paid (%) | Loan Share (%) | Loan Number Share (%) | Person Share (%) |
|---|---|---|---|---|---|
| 2002-03 | Government | 13.9 | 2.2 | 1.7 | 1.7 |
| | Co-operative Bank | 13.0 | 2.5 | 2.9 | 3.3 |
| | Bank | 13.6 | 37.0 | 14.8 | 16.2 |
| | All Institutional Loan | 13.6 | 41.7 | 19.4 | 21.2 |
| 2018-19 | Government | 13.5 | 17.7 | 28.8 | 26.4 |
| | Co-operative Bank | 11.9 | 1.5 | 2.2 | 2.3 |
| | Bank | 9.1 | 39.9 | 21.8 | 22.3 |
| | All Institutional Loan | 10.5 | 59.1 | 52.8 | 51.0 |

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).

Table 3 highlights significant changes in interest rates, loan shares, and loan/person share distribution for institutional loan sources between 2002-03 and 2018-19.

Changes in Interest Rates (2002-03 vs. 2018-19): Across all institutional sources, there has been a marked decline in average interest rates. The overall institutional loan interest rate dropped from 13.6% in 2002-03 to 10.5% in 2018-19, indicating improved affordability of formal credit sources. Specifically, the bank loan interest rate fell significantly from 13.6% to 9.1%, making banks a more attractive source for loans over time. Government loans saw a minor reduction from 13.9% to 13.5%, while cooperative bank rates decreased from 13.0% to 11.9%. These declines suggest that institutional lenders have made concerted efforts to reduce borrowing costs for farmers, likely driven by government-backed financial initiatives.

The loan share of institutional sources increased from 41.7% in 2002-03 to 59.1% in 2018-19. This rise, especially in bank loans, which increased from 37.0% to 39.9%, underscores a growing reliance on formal banking institutions. Notably, government loan share saw a substantial increase from 2.2% to 17.7%, suggesting enhanced government efforts to extend credit to farmers, possibly through schemes like the Kisan Credit Card (KCC) and subsidies. In contrast, the share of cooperative bank loans decreased slightly from 2.5% to 1.5%, indicating a decline in the influence of cooperatives in providing rural credit.

The loan number share and person share for institutional loans also show a significant increase, reflecting the growing formalization of rural credit markets. The loan number share for institutional loans rose from 19.4% in 2002-03 to 52.8% in 2018-19, while the person share grew from 21.2% to 51.0%. These figures indicate that a larger proportion of loans and borrowers are now tied to institutional sources, particularly banks and government agencies, pointing to an increased outreach of formal credit institutions to a broader farmer base.

Overall, institutional loans have become more prevalent and affordable over time, with banks continuing to dominate the loan landscape, and government loans making significant inroads. The growing reliance on institutional sources, combined with declining interest rates, supports the research objective of evaluating the shift in loan distribution. This shift indicates that policies aimed at expanding institutional credit to farmers have been relatively successful, although there remains scope for improvement, particularly in revitalizing cooperative banks as important credit sources.

### Non institutional loan

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

| Year | Loan Source | Avg. Interest Paid (%) | Loan Share (%) | Loan Number Share (%) | Person Share (%) |
|---|---|---|---|---|---|
| 2002-03 | Relatives & Friends | 10.7 | 12.8 | 24.4 | 24.7 |
| | Trader | 32.1 | 2.2 | 5.8 | 6.4 |
| | Agricultural/Professional Moneylender | 49.0 | 32.8 | 44.0 | 41.5 |
| | Others | 42.4 | 10.6 | 6.3 | 6.1 |
| | All Non-Institutional Loan | 38.8 | 58.4 | 80.5 | 78.7 |
| 2018-19 | Relatives & Friends | 0.0 | 14.3 | 19.0 | 19.9 |
| | Trader | 17.9 | 3.2 | 3.2 | 3.2 |
| | Agricultural/Professional Moneylender | 48.1 | 16.7 | 16.8 | 17.6 |
| | Others | 40.3 | 6.7 | 8.3 | 8.4 |
| | All Non-Institutional Loan | 27.6 | 40.9 | 47.3 | 49.1 |

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)

Table 4 reveals notable changes in interest rates, loan shares, and loan/person share distribution for non-institutional loan sources between 2002-03 and 2018-19.

Non-institutional loan interest rates have generally decreased but remain considerably higher than institutional rates. The overall non-institutional loan interest rate dropped from 38.8% in 2002-03 to 27.6% in 2018-19. The most significant reduction occurred for trader loans, where rates fell from 32.1% to 17.9%. However, loans from agricultural/professional moneylenders continue to carry exorbitant interest rates, only slightly decreasing from 49.0% to 48.1%. Despite the decline, these high rates suggest that informal lending remains a costly option for many farmers, particularly those who cannot access formal credit.

The loan share of non-institutional sources declined from 58.4% in 2002-03 to 40.9% in 2018-19, signalling a significant shift toward institutional loans. Loans from agricultural/professional moneylenders saw a sharp decline in share, from 32.8% to 16.7%, suggesting that farmers are gradually moving away from this traditionally dominant source of informal credit. Similarly, the loan share for relatives and friends increased slightly from 12.8% to 14.3%, indicating that informal social networks remain relevant, though less dominant than in the past. Trader loan share remained relatively stable, rising modestly from 2.2% to 3.2%, while the share of other non-institutional sources dropped from 10.6% to 6.7%.

Despite the decline in loan share, non-institutional sources still accounted for a majority of loan number share and person share in 2018-19, though these figures have decreased. The loan number share dropped from 80.5% in 2002-03 to 47.3% in 2018-19, while the person share fell from 78.7% to 49.1%. This decline points to a marked reduction in the number of loans and individuals relying on non-institutional sources, reflecting the growing penetration of formal financial institutions.

The trends show that while non-institutional loans remain important, their role in rural credit markets is diminishing as institutional sources become more accessible. The declining interest rates and loan shares for money lenders and traders suggest that farmers are increasingly able to access more affordable credit from formal institutions. However, the persistence of high interest rates for money lenders highlights that many farmers, especially those who cannot meet the collateral or documentation requirements of formal institutions, still rely on costly informal loans.

The data from Tables 3 and 4 support the research objective of investigating the trends in interest rates and loan shares among institutional and non-institutional sources. The findings show a clear shift in favor of institutional loans, which have become more accessible and affordable for Bihar farmers over time. The growing share of institutional loans, particularly from banks and government agencies, combined with the declining influence of non-institutional sources like moneylenders, underscores the effectiveness of policies aimed at increasing formal credit access.

However, the persistence of high interest rates for non-institutional loans, particularly from moneylenders, suggests that informal credit continues to play a role for farmers who face barriers to institutional credit. These trends highlight the need for continued efforts to reduce dependence on costly informal loans, particularly for smaller and marginal farmers, while strengthening the reach of institutional credit sources to ensure more equitable access to affordable loans.

### Major findings

The study reveals several significant trends in credit accessibility, income growth, and loan distribution among farmers in Bihar between 2002-03 and 2018-19, particularly in the context of institutional and non-institutional loan sources.

### Income growth and landholding size

The analysis of Table 1 indicates a clear positive relationship between landholding size and income growth. Marginal farmers saw a modest rise in average annual income from

₹45,866 in 2002-03 to ₹67,176 in 2018-19. In contrast, small, medium, and large farmers experienced more substantial income growth, with large farmers seeing the most significant increase, from ₹189,843 to ₹281,459. This trend highlights the persistent income disparity between small and marginal farmers and those with larger landholdings, reinforcing the critical role of land size in agricultural income generation.

**Increasing loan accessibility across all farmer categories**

The percentage of loanee households increased across all landholding categories, with medium and large farmers showing the most substantial growth. Large farmers, in particular, saw an increase in the proportion of households taking loans, from 17.5% in 2002-03 to 50.0% in 2018-19. This indicates improved access to credit for larger farmers, while marginal farmers' loan accessibility remained relatively stagnant, moving from 39.7% to 39.3%. This divergence suggests that smaller farmers still face significant challenges in accessing credit.

**Shift toward institutional loans**

Table 2 shows a notable shift toward institutional loans across all landholding categories. The proportion of institutional loan recipients among marginal farmers rose from 5.9% in 2002-03 to 21.4% in 2018-19. For large farmers, institutional loan reliance grew from 9.2% to 45.9%. This trend indicates the growing formalization of credit markets, with farmers increasingly accessing institutional credit sources like banks and government-backed schemes. However, non-institutional loans remain prominent for smaller farmers, particularly marginal farmers, who continue to rely on informal credit networks due to barriers like collateral requirements.

**Decline in interest rates**

Both institutional and non-institutional loan interest rates decreased over time, with institutional rates showing a more significant drop. The average institutional loan rate fell from 13.6% in 2002-03 to 10.5% in 2018-19, making formal credit sources more affordable. Non-institutional rates, while decreasing, remained higher, particularly for loans from moneylenders, whose rates fell from 49.0% to 48.1%. This gap in interest rates indicates that while formal credit is becoming more accessible, informal credit remains costly, particularly for farmers who struggle to access institutional loans.

**Growing loan amounts**

The average loan amount increased across all landholding categories. Marginal farmers saw their average loan rise from ₹25,729 to ₹45,286, while large farmers experienced an increase from ₹131,291 to ₹198,132. These increases, particularly in institutional loan amounts, suggest that farmers are borrowing more, possibly to finance larger agricultural investments or expand their operations, reflecting improved access to formal financial systems.

**Policy suggestions**

**Expand access to institutional credit for marginal and small farmers**

While the share of institutional loans has increased, marginal and small farmers still rely heavily on non-institutional loans due to barriers such as collateral requirements and limited financial literacy. To address these challenges, policymakers should implement initiatives that simplify the loan application process and expand the availability of collateral-free loans. Expanding rural banking networks, microfinance institutions, and self-help groups (SHGs) could also help marginalized farmers access institutional credit more easily.

**Strengthen government credit schemes**

The significant rise in the share of government loans between 2002-03 and 2018-19 indicates the effectiveness of government-backed schemes like the Kisan Credit Card (KCC). Expanding these programs, particularly targeting small and marginal farmers, can further reduce dependence on informal loans. Providing targeted subsidies and enhancing awareness of government credit schemes through farmer education programs can ensure that more farmers benefit from formal financial systems.

**Address regional disparities in credit access**

There is a need to address regional disparities in access to institutional loans, particularly in remote areas where formal financial institutions are less accessible. The government should focus on strengthening rural banking infrastructure and mobile banking solutions to ensure that all farmers, regardless of their location, can easily access institutional credit.

**Improve financial literacy and credit awareness**

Many small farmers remain unaware of the benefits of institutional loans and government-backed schemes. A dedicated financial literacy program that educates farmers about the advantages of institutional credit, loan processes, and managing indebtedness can empower them to make informed credit decisions. This initiative can be coupled with support services to help farmers navigate the loan application process.

**Lower interest rates for marginal farmers**

While institutional loan rates have decreased, marginal and small farmers still face relatively high rates compared to larger farmers. To promote equitable access, policies should focus on reducing interest rates for small-scale farmers, possibly through targeted interest rate subsidies or low-interest credit lines, to further incentivize the shift from non-institutional to institutional loans.

By focusing on these policy interventions, Bihar's agricultural sector can achieve more equitable growth, reducing income disparities and fostering sustainable agricultural development through greater access to affordable institutional credit.

**References**

1. Banerjee A, Duflo E. *Poor economics: A radical rethinking of the way to fight global poverty*. Public Affairs, 2011.
2. Bhaduri A. On the formation of usurious interest rates in backward agriculture. Cambridge Journal of Economics. 1977;1(4):341-352.

3. Bell C. Interactions between institutional and informal credit agencies in rural India. The World Bank Economic Review. 1990;4(3):297-327. https://doi.org/10.1093/wber/4.3.297
4. Government of India. *Kisan Credit Card Scheme: Review and recommendations*. Ministry of Agriculture, Government of India, 2007.
5. NABARD. *Annual report on rural credit and agriculture financing in India*. National Bank for Agriculture and Rural Development, 2018. Retrieved from *https://www.nabard.org*
6. National Sample Survey Office. *Situation Assessment Survey of Farmers, NSS 59th Round, Schedule 33*. Ministry of Statistics and Programme Implementation, Government of India, 2003. *https://microdata.gov.in/NADA43/index.php/catalog/104*
7. National Sample Survey Office. *Situation Assessment of Agricultural Households, January 2019 – December 2019, 77th Round, Visit 1 and Visit 2*. Ministry of Statistics and Programme Implementation, Government of India, 2019. *https://microdata.gov.in/nada43/index.php/catalog/157/related_materials*
8. Rajeev M, Bhattacharjee M. Institutional credit, financial inclusion, and rural development: An Indian perspective. Journal of Rural Studies. 2013;29:19-28. https://doi.org/10.1016/j.jrurstud.2012.12.002
9. Rao N. The struggle for credit: Farmers and institutional loans in India. Indian Economic Review. 2016;51(1):67–85.
10. Ray P. Non-institutional sources of credit in rural India. Economic and Political Weekly. 2007;42(35):3557–3565.
11. Sharma R. Non-institutional credit in Indian agriculture: Issues and challenges. Agricultural Economics Research Review. 2017;30(1):123-135.
12. Singh A, Kumar A, Bairwa G, Bhushan B. The changing fortunes of Odisha’s farmers: A comparative analysis of indebtedness and economic status (2002-2019). Journal of Social Review and Development. 2024;3(1):23-29. https://www.dzarc.com/social/article/view/550.