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CREDIT CHOICES IN AGRICULTURE: ANALYSING THE SHIFT IN FARMER LOAN SOURCES IN WEST BENGAL (2002-19)

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ABSTRACT

This study investigates the evolving credit patterns among farmers in West Bengal between 2002-03 and 2018-19, with a specific focus on the distribution of institutional and non-institutional loan sources. Drawing on data from the National Sample Survey Office (NSSO) 59th Round (2002-03) and 77th Round (2018-19), the research aims to analyze the relationship between farmers' income growth and access to credit, evaluate the shift in loan sources across landholding categories, and examine trends in interest rates and loan shares. Findings reveal a notable increase in farmers' reliance on institutional loans, particularly from banks, as the share of institutional credit rose from 58.0% to 78.5% over the study period. Meanwhile, non-institutional loans, particularly from traders and moneylenders, showed a sharp decline. The study also highlights significant reductions in interest rates for both institutional and non-institutional loans, with banks becoming the dominant source of credit, offering lower interest rates compared to 2002-03. Marginal and small farmers, however, continue to face challenges in accessing large loan amounts, despite improvements in institutional credit availability. This study contributes to the understanding of rural credit dynamics and offers insights for policymakers to enhance access to affordable credit for all landholding categories in West Bengal.

Keywords: Credit Patterns, Farmers, West Bengal, Institutional Loans, Non-Institutional Loans, Income Growth, Interest Rates, Landholding Categories.

I. INTRODUCTION

Agriculture has long been the backbone of West Bengal's economy, employing a significant portion of the population and contributing substantially to the state's Gross Domestic Product (GDP). However, the agricultural sector in West Bengal, like in many other parts of India, faces persistent financial challenges, making credit an indispensable part of farmers' livelihoods. Farmers in the region, particularly small and marginal farmers, often rely on loans to meet various needs, including financing agricultural inputs, managing day-to-day consumption, and coping with seasonal income fluctuations. These financial challenges are compounded by the risks of crop failure, fluctuating agricultural income, and rising input costs. As a result, the question of where farmers source their loans from, and how this has changed over time, is a critical issue for policymakers and financial institutions alike.

The reliance of West Bengal's farmers on loans stems from the fundamental nature of agricultural income, which is seasonal and often unpredictable. Crops are cultivated in specific cycles, and income is realized only during harvest, leaving farmers with limited cash flow during the rest of the year. Yet, during these periods, farmers must finance the purchase of seeds, fertilizers, pesticides, and equipment—essential inputs that can significantly affect crop yields and profitability (Nair, 2015). Additionally, the cost of agricultural inputs has been steadily rising in recent years, placing further strain on farmers who must also contend with the risks of adverse weather conditions, pests, and market price fluctuations (Raj et al., 2019). Such factors create an ongoing need for external finance to bridge the gap between the timing of income generation and the necessity of expenditures.

For farmers, the importance of institutional loans is well-documented. Access to credit from formal financial institutions, such as banks and cooperatives, has long been advocated as a means to reduce farmers'

dependence on informal sources of credit, which tend to be exploitative and carry higher interest rates (Reddy, 2012). Institutional loans, backed by government subsidies and policies such as the Kisan Credit Card (KCC) scheme, offer lower interest rates and more favorable repayment terms, and they are crucial for farmers to invest in productivity-enhancing technologies (Sahu et al., 2016). However, despite government efforts to expand the reach of institutional credit, non-institutional loans, particularly from moneylenders and traders, continue to play a significant role in rural credit markets, especially in states like West Bengal (Basu & Basu, 2020).

One of the key reasons non-institutional credit sources remain prevalent is the ease of access they provide. While institutional loans require formal procedures, documentation, and often collateral, non-institutional lenders are able to bypass these requirements, offering quick and flexible loans without the need for collateral (Niranjan, 2018). This is particularly important for small and marginal farmers who may not own sufficient assets to pledge as security for formal loans. Additionally, the longstanding informal relationships between farmers and local moneylenders or traders contribute to a sense of trust and familiarity, further encouraging farmers to rely on these sources despite the higher costs (Shah, 2014). Moneylenders often have a better understanding of the local conditions and specific needs of farmers, allowing them to offer personalized loan arrangements, which institutional lenders may not be able to replicate (Nair, 2015).

Despite the continued presence of non-institutional loans, there has been a significant shift in the credit landscape over the past two decades, particularly between 2002-03 and 2018-19. Government initiatives to improve financial inclusion, the expansion of microfinance institutions, and the increasing availability of institutional credit products, such as the Kisan Credit Card, have altered the dynamics of credit access for farmers in West Bengal (Chakrabarti, 2019). However, research on how these changes have impacted the relative share of institutional versus non-institutional credit sources remains limited. While several studies have examined the role of institutional credit in agriculture (Sahu et al., 2016), there is a gap in understanding the long-term trends and shifting preferences of farmers over time, particularly in regions like West Bengal where informal credit sources have historically been dominant (Basu & Basu, 2020).

This study seeks to fill that gap by providing a comparative analysis of the shift in farmer loan sources in West Bengal between 2002 and 2019. By examining the changing dynamics between institutional and non-institutional credit, this study aims to shed light on the factors influencing farmers' credit choices over time. Understanding this shift is crucial for policymakers and financial institutions, as it has significant implications for agricultural productivity, rural development, and the effectiveness of financial inclusion programs. Moreover, identifying the reasons behind the persistence of non-institutional loans can inform future interventions aimed at reducing the reliance on exploitative credit sources.

This study will contribute to the existing body of literature by offering a detailed examination of the evolving credit landscape in West Bengal's agricultural sector. It will explore the interplay of institutional and non-institutional credit sources, considering factors such as ease of access, collateral requirements, and farmers' perceptions of risk and trust. Ultimately, this research aims to provide valuable insights for crafting more effective policies that ensure farmers have access to affordable and sustainable sources of credit.

II. LITERATURE REVIEW

The dynamics of rural credit markets in India, particularly the balance between institutional and non-institutional sources of credit, have been a subject of extensive study over the past several decades. In West Bengal, a state characterized by smallholder farming and high dependency on agriculture, the choice of credit source is pivotal for the financial stability of farming households. This review explores key studies that have examined the role of institutional and non-institutional credit sources, their merits and demerits, and how these studies inform the evolving landscape of farmer loan choices in West Bengal from 2002 to 2019.

The rural credit market in India has traditionally been dominated by informal sources, such as moneylenders, traders, and family or friends. Early studies on Indian rural credit markets reveal the entrenched role of non-institutional lenders, who offer easy access to credit but often at exorbitant interest rates (Basu, 2020). Despite the exploitation associated with non-institutional loans, they have continued to thrive due to their flexibility and ease of availability. According to Shah (2014), the informal relationships that farmers share with

moneylenders and traders have made these sources more appealing, especially in times of urgent need or in the absence of collateral.

Institutional credit sources, on the other hand, have been promoted by the Indian government since the 1960s, with the goal of formalizing agricultural credit through banks and cooperatives (Reddy, 2012). The introduction of policies such as the Kisan Credit Card (KCC) in 1998 sought to increase the flow of institutional credit to farmers by simplifying loan procedures and offering better terms. However, despite these efforts, institutional credit has faced limitations in reaching the most vulnerable farmers, particularly smallholders in remote areas (Sahu et al., 2016). Challenges such as bureaucratic hurdles, the requirement for collateral, and the inability to assess creditworthiness have contributed to the persistent role of non-institutional credit sources.

The institutional sources of credit in rural India primarily include commercial banks, cooperative banks, and regional rural banks. These institutions are often viewed as more reliable and less exploitative than their non-institutional counterparts due to regulated interest rates and government support through subsidies and relief schemes (Chakrabarti, 2019). Studies such as those by Raj, Singh, and Nair (2019) have shown that institutional loans play a critical role in enhancing agricultural productivity by enabling farmers to invest in better inputs, technology, and infrastructure.

However, the effectiveness of institutional credit in meeting the needs of farmers has been mixed. According to Sahu et al. (2016), while larger farmers with access to collateral and adequate documentation have benefited from institutional loans, smallholders often face significant barriers to accessing these resources. Cooperative banks, which were designed to serve the rural poor, have also struggled with inefficiency and mismanagement, resulting in lower penetration rates in regions like West Bengal (Basu & Basu, 2020).

Non-institutional credit sources, including moneylenders, relatives, and traders, continue to hold a significant share of the rural credit market in West Bengal. Studies such as those by Nair (2015) and Niranjan (2018) have documented the persistence of these sources, particularly among smallholder farmers who lack the collateral or formal documentation required for institutional loans. Moneylenders, while charging high interest rates, offer immediate access to funds without lengthy bureaucratic processes, making them an attractive option for farmers in urgent need (Shah, 2014). Traders, on the other hand, often provide input supplies in exchange for future crop sales, tying farmers to unfavorable trade conditions (Niranjan, 2018).

While the ease of access is a key advantage of non-institutional credit, its major drawback is the high cost. Moneylenders often charge exorbitant interest rates, creating a cycle of debt for farmers who struggle to repay their loans, particularly in years of crop failure or low market prices (Reddy, 2012). The lack of regulatory oversight on non-institutional loans means that farmers have little recourse in cases of exploitation or unfair practices.

III. RESEARCH GAPS

While numerous studies have explored the merits and demerits of institutional and non-institutional credit sources, there is limited research that systematically traces the shift in farmer loan sources over time, particularly in a state like West Bengal. Most existing studies focus on either the shortcomings of institutional credit (Sahu et al., 2016) or the persistence of non-institutional lenders (Shah, 2014), without offering a comparative analysis of how these dynamics have evolved over the years.

The current study, Credit Choices in Agriculture: Tracing the Shift in Farmer Loan Sources in West Bengal (2002-19), aims to fill this gap by analyzing the changes in farmer credit preferences from 2002 to 2019. Understanding these changes is crucial for policymakers, financial institutions, and agricultural stakeholders, as it can inform future strategies for improving credit accessibility and reducing farmer indebtedness in West Bengal.

IV. 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 West Bengal 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.

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V. RESEARCH METHODOLOGY OF THE STUDY

This study investigates the shifting patterns of credit sources for farmers in West Bengal, comparing data from two rounds of the National Sample Survey Office (NSSO): the 59th Round (2002-03) and the 77th Round (2018-19). The methodology focuses on harmonizing the data from these surveys to enable a comparative analysis of institutional and non-institutional credit sources over time.

The primary data for this study are drawn from the Situation Assessment Surveys (SAS) of farmer households. The 59th Round (2003) surveyed 51,770 farmer households across India, with 3,958 families in West Bengal, representing a population of 21,556 individuals. The 77th Round (2019), which surveyed 3,297 agricultural households in West Bengal (15,369 individuals), combined two surveys: the Land and Livestock Holdings Survey and the SAS, providing a more integrated perspective on rural economic activities. These surveys are invaluable for studying changes in loan sources as they capture data on the indebtedness of farming households, their access to institutional credit, and reliance on non-institutional sources.

The key challenge in comparing the two rounds lies in the differing classifications of loan sources. While the 59th Round categorized loans into broad categories such as government, cooperative society, and banks for institutional sources, and moneylenders, traders, and others for non-institutional sources, the 77th Round introduced more detailed subcategories, including specific institutions like microfinance institutions, self-help groups (SHGs), and non-banking financial corporations (NBFCs). To address this, we consolidated loan categories into broader comparable groups. Institutional loans were harmonized into government, cooperative banks, and commercial banks, while non-institutional loans were grouped into moneylenders, traders, relatives, and other sources. This harmonization allowed for a meaningful comparison across the two survey periods.

Finally, to examine changes in credit patterns over time, trends were analyzed by comparing the reliance on institutional versus non-institutional sources. This analysis highlights shifts in access to formal banking institutions, cooperative societies, and informal sources like moneylenders. The findings offer insights into how the agricultural credit landscape in West Bengal has evolved, reflecting broader economic changes and the role of formal financial institutions in improving credit access for farmers.

VI. ANALYSIS OF THE STUDY

Landholding Patterns and Credit Accessibility Among Farmers

As per Table 1, the average annual income of West Bengal farmers shows notable changes across landholding categories between 2002-03 and 2018-19. Marginal farmers, those owning less than 1 acre of land, saw an increase in their average annual income from ₹54,216 in 2002-03 to ₹70,829 in 2018-19, reflecting a modest 30.6% rise over the period. Similarly, small farmers (1-1.99 acres) experienced a more significant income increase from ₹63,911 to ₹83,841, marking a 31.2% growth. Medium farmers (2-4.99 acres) witnessed the largest percentage increase in income, jumping from ₹92,473 to ₹146,948, a substantial 58.9% rise. In contrast, large farmers (5 acres or more) saw their income stagnate, decreasing marginally from ₹157,886 in 2002-03 to ₹154,297 in 2018-19, representing a 2.3% decline. These trends underscore the positive correlation between land size and income, as larger landholders historically earned more, though the 2018-19 data suggests a slight narrowing of income gaps between medium and large farmers.

Table 1: West Bengal Farmers' Income and Credit accessiblity 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)	4,157,705	54,216	54.3	22.7	36.1	20,700
	Small (1-1.99 Acre)	1,580,954	63,911	44.6	23.3	25.2	29,739
	Medium (2-4.99 Acre)	975,938	92,473	46.8	33.8	17.3	53,758

Year	Farmer Category	Farmer Households	Average Annual Income (₹)	% Loanee Households	% Institutional Loan Recipients	% Non-Institutional Loan Recipients	Average Loan Outstanding (₹)
	Large (5 Acre & more)	207,926	157,886	45.6	36.2	17.7	69,570
	Overall	**6,922,523**	**64,938**	**50.8**	**24.8**	**30.4**	**28,127**
2018-19	Marginal(< 1 Acre)	5,243,770	70,829	50.4	38.4	17.9	39,773
	Small (1-1.99 Acre)	979,890	83,841	51.9	39.8	18.0	81,089
	Medium (2-4.99 Acre)	430,080	146,948	52.4	38.8	18.9	89,062
	Large (5 Acre & more)	35,245	154,297	69.0	60.2	15.2	135,745
	Overall	**6,688,985**	**78,069**	**50.8**	**38.7**	**17.9**	**49,901**

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 credit accessibility, the percentage of loanee households reveals nuanced shifts. For marginal farmers, the percentage of loanee households declined from 54.3% in 2002-03 to 50.4% in 2018-19. This drop could suggest increasing barriers to credit access or changes in borrowing behavior among smaller farmers. On the other hand, small, medium, and large farmers saw an increase in the percentage of loanee households, with small farmers rising from 44.6% to 51.9%, medium farmers from 46.8% to 52.4%, and large farmers seeing a significant jump from 45.6% to 69.0%. This rise among larger farmers might indicate better access to credit over time, possibly driven by higher asset bases and increased trust from financial institutions.

When distinguishing between institutional and non-institutional loan recipients, an evident trend is the increased reliance on institutional credit sources across all categories. Marginal farmers showed a sharp rise in institutional loan recipients, from 22.7% in 2002-03 to 38.4% in 2018-19, indicating better access to formal financial services. A similar trend is seen among small (23.3% to 39.8%), medium (33.8% to 38.8%), and large farmers (36.2% to 60.2%). This shift reflects the success of governmental initiatives aimed at improving financial inclusion, such as expanding the Kisan Credit Card scheme (Sahu et al., 2016). In contrast, non-institutional loan recipients decreased across all categories, with marginal farmers dropping from 36.1% to 17.9%, small farmers from 25.2% to 18.0%, and medium farmers from 17.3% to 18.9%. Large farmers also showed a decline in reliance on non-institutional credit, from 17.7% to 15.2%. The reduced reliance on moneylenders and informal lenders highlights the growing formalization of rural credit markets.

Average loan amounts also saw significant changes. Marginal farmers saw their average loan amount nearly double, rising from ₹20,700 in 2002-03 to ₹39,773 in 2018-19. Small farmers experienced a much larger increase, from ₹29,739 to ₹81,089, while medium farmers' loans grew from ₹53,758 to ₹89,062. Large farmers saw the most dramatic increase, from ₹69,570 to ₹135,745. These figures reflect a clear relationship between income levels and access to credit, with larger loan amounts generally being accessible to farmers with larger landholdings. The increase in average loan size, particularly among medium and large farmers, suggests that farmers are borrowing more to invest in capital-intensive inputs, potentially leading to higher productivity and income growth (Raj et al., 2019). However, for marginal farmers, the smaller increase in loan amounts compared to other groups may indicate persistent barriers to credit access or concerns about growing indebtedness.

The borrowing behavior among different landholding sizes reveals several key trends. Larger farmers increasingly rely on institutional loans, potentially due to their stronger collateral positions and established relationships with banks. Conversely, smaller farmers, while accessing more institutional credit than before, may still face challenges due to limited collateral and lower financial literacy (Basu & Basu, 2020). The growing loan amounts, particularly among medium and large farmers, reflect greater investment capacity, though they may also indicate rising indebtedness.

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These insights support the research objective of analyzing the link between farmers' income growth, loan access, and indebtedness. As Table 1 demonstrates, while institutional credit has become more accessible, income growth has not kept pace for marginal and small farmers, suggesting that increased loan access does not necessarily translate into proportional income gains. This highlights the need for policies that not only improve credit access but also address the structural issues in agricultural productivity and profitability, particularly for smaller landholders. Landholding fragmentation, which has been exacerbated by population pressures and inheritance patterns, may also contribute to these dynamics, as smaller plots often yield lower returns (Chakrabarti, 2019). Rising indebtedness among farmers, especially those with lower incomes, raises concerns about the sustainability of current credit practices and underscores the importance of targeted interventions in the agricultural credit market (Reddy, 2012).

In conclusion, Table 1 reveals significant shifts in income and credit accessibility patterns among West Bengal farmers between 2002-03 and 2018-19. The findings emphasize the complex interplay between landholding size, income growth, and borrowing behavior, suggesting that while institutional credit access has improved, its benefits have been unevenly distributed across farmer categories. This study's focus on tracing the shift in loan sources provides new insights into the evolving rural credit market, contributing to a more nuanced understanding of how credit access impacts income growth and indebtedness among farmers in West Bengal.

Institutional and Non-Institutional Loans proportion in West Bengal

As per Table 2, there are significant changes in the distribution of institutional and non-institutional loan sources among West Bengal farmers across various landholding categories between 2002-03 and 2018-19. These shifts offer important insights into how farmers' reliance on different credit sources has evolved over time, justifying the need for this research.

Table 2: Changes in Institutional and Non-Institutional Loan Rates and Amounts Among West Bengal 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)	9,240	16.1	11,461	20.8	44.6
	Small (1-1.99 Acre)	17,372	19.8	12,366	19.4	58.4
	Medium (2-4.99 Acre)	42,575	14.6	11,182	23.2	79.2
	Large (5 Acre & more)	49,367	12.7	20,203	25.5	71.0
	Overall	**16,284**	**16.1**	**11,842**	**21.0**	**57.9**
2018-19	Marginal(< 1 Acre)	28,453	12.7	11,320	17.9	71.5
	Small (1-1.99 Acre)	73,455	10.4	7,634	13.5	90.6
	Medium (2-4.99 Acre)	78,108	9.6	10,954	7.1	87.7
	Large (5 Acre & more)	125,333	7.9	10,409	3.2	92.3
	Overall	**39,163**	**11.6**	**10,738**	**16.6**	**78.5**

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 have increased dramatically across all landholding categories between 2002-03 and 2018-19. Marginal farmers (less than 1 acre) saw their average institutional loan rise from ₹9,240 in 2002-03 to ₹28,453 in 2018-19, a significant increase of over 200%. Small farmers (1-1.99 acres) experienced an even larger growth, with their average institutional loan amount rising from ₹17,372 to ₹73,455, a fourfold increase. Medium farmers (2-4.99 acres) saw their institutional loan amounts rise from ₹42,575 to ₹78,108, while large farmers (5 acres or more) experienced the highest increase, from ₹49,367 to ₹125,333.

In contrast, the average non-institutional loan amounts either stagnated or decreased during the same period. Marginal farmers saw a slight decline in their non-institutional loan amounts, from ₹11,461 in 2002-03 to ₹11,320 in 2018-19. Small farmers witnessed a sharper drop, from ₹12,366 to ₹7,634, while medium and large farmers saw slight decreases in non-institutional loan amounts from ₹11,182 to ₹10,954 and from ₹20,203 to ₹10,409, respectively.

The institutional loan rates have generally decreased across all landholding categories over time, reflecting an increased availability of cheaper institutional credit. For marginal farmers, the institutional loan rate decreased from 16.1% in 2002-03 to 12.7% in 2018-19, indicating that these farmers were able to access more favorable terms over time. Similarly, the institutional loan rate for small farmers dropped from 19.8% to 10.4%, medium farmers saw a decline from 14.6% to 9.6%, and large farmers from 12.7% to 7.9%. These declining rates suggest that institutional sources became more competitive and accessible over the study period, particularly due to government efforts such as the expansion of agricultural credit schemes and subsidies (Sahu et al., 2016).

On the other hand, non-institutional loan rates also decreased, though less significantly. For marginal farmers, the non-institutional loan rate dropped from 20.8% in 2002-03 to 17.9% in 2018-19, while small farmers saw a larger decrease from 19.4% to 13.5%. Medium farmers experienced a sharp decline from 23.2% to 7.1%, and large farmers had the most dramatic drop, from 25.5% to just 3.2%. The sharp reduction in non-institutional loan rates for larger landholders suggests that even informal lenders faced competition from institutional credit, or large farmers were able to negotiate better terms due to their improved financial standing (Basu & Basu, 2020).

The proportion of institutional loans has increased markedly across all landholding categories, underscoring the growing reliance on formal credit sources. In 2002-03, marginal farmers accessed only 44.6% of their loans from institutional sources, but by 2018-19, this figure had risen significantly to 71.5%. This shift reflects increased access to formal banking services for smaller farmers, a key focus of financial inclusion policies (Chakrabarti, 2019). For small farmers, the proportion of institutional loans increased from 58.4% to 90.6%, indicating a near-complete shift away from non-institutional lenders. Similarly, medium farmers saw a rise from 79.2% to 87.7%, while large farmers moved from 71.0% to 92.3%. The overall trend demonstrates a clear move toward institutional loans across all categories, suggesting that efforts to formalize rural credit markets have been largely successful.

The shifts in loan source distribution highlight a significant movement away from non-institutional loans, particularly among small and medium farmers, who saw the most substantial increase in their reliance on institutional credit. The rising proportion of institutional loans, combined with declining non-institutional loan rates and amounts, indicates that farmers are increasingly turning to formal financial institutions for credit. This shift is likely driven by several factors, including improved access to banking services, government subsidies, and the introduction of more favorable loan schemes such as the Kisan Credit Card (Niranjan, 2018). Additionally, the decreasing loan rates for institutional credit suggest that formal lenders have become more competitive and are offering better terms than informal moneylenders.

These trends strongly support the research objective of evaluating changes in the distribution of institutional and non-institutional loan sources among West Bengal farmers. The data reveal a clear transition from reliance on non-institutional credit to institutional sources, particularly for small and marginal farmers. The increase in institutional loan amounts, combined with the declining loan rates, indicates that formal credit channels have become more accessible and affordable, a critical shift that has likely contributed to improved financial stability for farmers. However, the data also suggest that large farmers continue to dominate access to higher loan amounts, reflecting persistent inequalities in the rural credit market (Basu & Basu, 2020).

The study's focus on tracing this shift is crucial for understanding the broader implications of financial inclusion policies in West Bengal. By examining how access to institutional credit has evolved across landholding categories, this research provides insights into the effectiveness of government interventions in expanding formal credit markets. Furthermore, the findings highlight the need for continued efforts to address the barriers that marginal and small farmers face in accessing institutional credit, such as collateral requirements and bureaucratic hurdles (Sahu et al., 2016). The declining reliance on non-institutional loans,

especially among smallholders, suggests that these challenges are gradually being overcome, but further policy attention is required to ensure equitable access to credit for all farmers.

In conclusion, the trends outlined in Table 2 demonstrate a significant shift toward institutional loans across all landholding categories in West Bengal between 2002-03 and 2018-19. These changes reflect the success of policies aimed at increasing financial inclusion and improving access to formal credit for farmers, while also highlighting ongoing challenges related to income inequality and access to large loan amounts for marginal and small farmers. These insights provide a strong foundation for evaluating the changing distribution of loan sources and their impact on farmer indebtedness, supporting the research objective of understanding the evolving credit landscape in West Bengal.

Change in Loan pattern

The credit landscape for farmers in West Bengal has undergone significant changes between 2002-03 and 2018-19, as evidenced by the shifts in loan disbursement and the evolving role of both institutional and non-institutional lenders. In 2002-03, the total loan disbursed to farmers in the state amounted to ₹9,886.745 crore, spread across 50.13 lakh loans and benefiting 43.20 lakh farmer households. By 2018-19, the total loan disbursed had increased substantially to ₹16,972.46 crore, with a marginally reduced number of loans at 46.04 lakh, reaching 42.33 lakh farmer families. This reflects not only the growing demand for credit in the agricultural sector but also changes in the credit distribution structure, as farmers' reliance on different sources of loans has shifted over time.

To better understand these shifts, this study categorizes the loan sources into institutional and non-institutional categories. Institutional sources include loans from government bodies, cooperative banks, and scheduled commercial banks. These formal sources have been the focus of government policies aimed at increasing financial inclusion and reducing farmers' dependence on exploitative informal lenders. Government loans encompass loans provided by insurance companies, provident funds, and other governmental agencies. Cooperative banks, a vital part of rural financial ecosystems, include both cooperative societies and banks that operate under the cooperative model. Lastly, commercial banks, regional rural banks (RRBs), and self-help groups (SHGs) or joint liability groups (JLGs) linked to these banks, represent another key institutional source of credit, often supported by government-backed schemes like the Kisan Credit Card (KCC).

On the other hand, non-institutional sources remain significant in the rural credit market, particularly for marginal and small farmers who may not have the collateral or formal documentation needed to access institutional loans. These sources include agricultural or professional moneylenders, traders, relatives, and friends, as well as other informal sources such as landlords, chit funds, and professionals. Agricultural moneylenders, in particular, have long provided quick and flexible access to credit, albeit at higher interest rates. Traders and input suppliers often extend credit tied to agricultural inputs, while informal loans from relatives and friends represent a more personal, trust-based form of lending. Despite government efforts to curb reliance on non-institutional sources, these avenues remain an important part of the rural credit ecosystem.

While we have categorized these sources to compare institutional and non-institutional loans across the two periods, it is important to note that the classifications in the 59th Round (2002-03) and 77th Round (2018-19) of the National Sample Survey Organization (NSSO) are not entirely identical. However, for the purposes of this study, we have harmonized the categories to allow for meaningful comparisons. Nonetheless, some limitations may arise due to differences in classification, and these must be considered when interpreting the results.

The following analysis of Tables 3 and 4 focuses on these categorized sources, evaluating how the distribution of institutional and non-institutional loans has shifted over time across different landholding categories. This will provide insights into the evolving credit choices of West Bengal farmers and their implications for agricultural policy and financial inclusion.

Institutional Loan Patterrn

Table 3 illustrates significant changes in interest rates, loan shares, loan number shares, and person shares for institutional loans among West Bengal farmers between 2002-03 and 2018-19.

Interest Rates

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The average interest rates for institutional loans decreased substantially between the two periods. In 2002-03, the average interest paid across all institutional sources was 16.1%, while by 2018-19, it had dropped to 11.6%. This reduction reflects a concerted effort by the government and financial institutions to make formal credit more affordable for farmers, aligning with financial inclusion policies aimed at reducing the dependency on high-interest informal loans (Chakrabarti, 2019).

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

Year	Loan Source	Avg. Interest Paid (%)	Loan Share (%)	Loan Number Share (%)	Person Share (%)
2002-03	Government	15.6	10.3	7.3	8.2
	Co-operative Bank	17.7	19.2	13.7	15.3
	Bank	15.2	28.5	16.3	18.3
	All Institutional Loan	**16.1**	**58.0**	**37.3**	**41.8**
2018-19	Government	14.7	17.9	26.0	25.7
	Co-operative Bank	8.4	15.1	15.0	15.8
	Bank	11.4	45.5	25.4	26.3
	All Institutional Loan	**11.6**	**78.5**	**66.4**	**67.8**

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).

- **Government Loans**: The interest rate for loans from government sources fell slightly, from 15.6% in 2002-03 to 14.7% in 2018-19. This minor reduction indicates stability in the terms of government credit but suggests that government loans remain a reliable and moderately priced option for farmers.
- **Co-operative Banks**: There was a dramatic reduction in interest rates for cooperative bank loans, from 17.7% in 2002-03 to just 8.4% in 2018-19. This sharp decrease highlights improvements in cooperative banking, likely driven by reforms aimed at strengthening rural credit cooperatives and making them more competitive (Basu & Basu, 2020).
- **Banks**: Interest rates for commercial banks and regional rural banks also declined, from 15.2% to 11.4%. This reflects the influence of initiatives like the Kisan Credit Card scheme and other government-backed credit programs aimed at making formal loans more accessible and affordable for farmers (Sahu et al., 2016).

Loan Share

The loan share, which indicates the proportion of total loans attributed to each institutional source, shows substantial shifts between 2002-03 and 2018-19.

- **Government Loans**: The share of government loans increased significantly, from 10.3% in 2002-03 to 17.9% in 2018-19. This suggests that government programs aimed at providing direct credit to farmers gained traction during this period.
- **Co-operative Banks**: The loan share for cooperative banks decreased slightly, from 19.2% to 15.1%. While the cooperative model continues to play an important role, the decline may reflect competition from more formalized banking channels, which have become increasingly dominant.
- **Banks**: The most notable change is the substantial increase in the loan share of banks, from 28.5% in 2002-03 to 45.5% in 2018-19. This sharp rise indicates that commercial banks have become the primary source of institutional credit for farmers, possibly due to greater financial inclusion efforts, improved rural banking networks, and the expansion of credit products (Niranjan, 2018).

Loan Number Share and Person Share

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The loan number share, which refers to the proportion of individual loans taken from each source, and the person share, which indicates the percentage of households accessing loans from each source, also show important trends.

- **Government Loans**: The loan number share and person share for government loans rose from 7.3% and 8.2%, respectively, in 2002-03 to 26.0% and 25.7% in 2018-19. This sharp increase indicates that more farmers are turning to government sources for credit, likely due to easier access and targeted government credit programs.
- **Banks**: Similarly, the loan number share and person share for banks increased significantly, from 16.3% and 18.3% to 25.4% and 26.3%. This reinforces the growing dominance of formal banks in rural credit markets.
- **Co-operative Banks**: The cooperative banks' loan number share and person share remained relatively stable, highlighting their continued but diminishing role compared to other institutional sources.

Overall, the trends in Table 3 point to a growing reliance on institutional credit, with significant increases in loan shares and reductions in interest rates across most institutional sources. These shifts support the research objective of investigating how institutional loan dynamics have evolved, showing that banks and government loans are playing an increasingly important role in meeting farmers' credit needs.

Non Institutional Loan

Table 4 shows the changes in interest rates, loan shares, loan number shares, and person shares for non-institutional loans between 2002-03 and 2018-19.

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

Year	Loan Source	Avg. Interest Paid (%)	Loan Share (%)	Loan Number Share (%)	Person Share (%)
2002-03	Relatives & Friends	5.0	15.4	17.4	18.5
	Trader	15.2	11.4	28.9	24.1
	Agricultural/Professional Moneylender	44.1	13.0	13.4	12.4
	Others	27.0	2.3	3.0	3.1
	All Non-Institutional Loan	**21.0**	**42.1**	**62.7**	**58.1**
2018-19	Relatives & Friends	0.0	7.7	11.8	11.8
	Trader	4.6	2.9	8.5	7.9
	Agricultural/Professional Moneylender	35.6	8.3	7.3	6.8
	Others	18.4	2.6	6.0	5.6
	All Non-Institutional Loan	**16.6**	**21.5**	**33.6**	**32.1**

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).

Interest Rates

Non-institutional sources, which traditionally charge higher interest rates, show some decline over the years but remain significantly higher than institutional rates.

- **Relatives & Friends**: The average interest rate from relatives and friends dropped to 0% by 2018-19, from 5.0% in 2002-03. This may indicate that these loans became more informal or were given interest-free, reflecting the personal nature of such loans.
- **Traders**: The interest rate on loans from traders fell sharply from 15.2% in 2002-03 to just 4.6% in 2018-19. This decrease suggests that traders may have become less exploitative over time or face competition from formal sources of credit (Niranjan, 2018).

- **Agricultural/Professional Moneylender**: Moneylenders, traditionally the most expensive source of credit, saw a decline in interest rates, from 44.1% to 35.6%. While still high, this reduction may reflect the impact of increased access to institutional credit, which could reduce farmers' dependence on moneylenders.
- **Others**: The interest rates from other sources also decreased from 27.0% to 18.4%, indicating a general reduction in the cost of borrowing from informal sources.

Loan Share

The loan share for non-institutional sources dropped significantly over time.

- **Relatives & Friends**: The loan share from relatives and friends decreased from 15.4% in 2002-03 to 7.7% in 2018-19. This decline suggests that as farmers gained better access to institutional loans, their reliance on personal networks for credit reduced.
- **Traders**: The loan share from traders dropped significantly from 11.4% to 2.9%, indicating a sharp reduction in the role of traders as a source of credit, likely due to the increasing dominance of formal credit sources.
- **Agricultural/Professional Moneylender**: The loan share for moneylenders also dropped, from 13.0% to 8.3%, signaling a decline in their influence. However, their continued presence shows that some farmers, particularly those in urgent need of credit or without access to institutional loans, still turn to moneylenders.
- **Others**: Other non-institutional sources saw only a slight reduction in their loan share, from 2.3% to 2.6%.

Loan Number Share and Person Share

Both the loan number share and person share for non-institutional loans showed similar trends of decline.

- **Relatives & Friends**: The loan number share dropped from 17.4% to 11.8%, and the person share from 18.5% to 11.8%, reflecting the reduced reliance on informal personal networks for credit.
- **Traders**: The most significant decline was seen in loans from traders, with the loan number share dropping from 28.9% to 8.5%, and the person share from 24.1% to 7.9%. This sharp decline aligns with the trend of increasing reliance on institutional sources.
- **Agricultural/Professional Moneylender**: Moneylenders saw their loan number share fall from 13.4% to 7.3%, while their person share decreased from 12.4% to 6.8%. This trend further underscores the shrinking role of moneylenders in rural credit markets.
- **Others**: The loan number share and person share for other sources both increased slightly, indicating a small but persistent role for alternative non-institutional sources.

Overall, the data in Tables 3 and 4 clearly show a shift away from non-institutional loan sources and toward institutional credit. Interest rates have decreased significantly for both institutional and non-institutional loans, but institutional sources now dominate the credit market, particularly banks and government loans. The loan shares, loan number shares, and person shares for institutional loans have all increased, while those for non-institutional sources have decreased. This shift aligns with the objectives of financial inclusion policies aimed at improving access to affordable credit for farmers and reducing dependence on exploitative informal lenders (Reddy, 2012). The declining influence of traders and moneylenders in particular suggests that farmers are benefiting from improved access to institutional loans, although some farmers, especially smallholders, may still rely on these sources in the absence of formal credit.

These trends support the research objective of investigating shifts in interest rates and loan shares among institutional and non-institutional sources, highlighting how the rural credit landscape in West Bengal has evolved over the 16-year period.

VII. FINDINGS AND POLICY RECOMMENDATIONS

The findings of this study reveal several important trends regarding the relationship between farmers' income growth, loan access, borrowing patterns, and the distribution of institutional and non-institutional credit sources in West Bengal between 2002-03 and 2018-19. By analyzing changes in landholding categories, outstanding loan amounts, interest rates, and loan shares, the study underscores the growing dominance of

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institutional credit while highlighting ongoing challenges for marginal and small farmers in terms of access and indebtedness.

The analysis of farmers' income growth reveals a positive correlation between landholding size and income levels. Larger farmers (owning 2 acres or more) saw a substantial increase in their average annual income between 2002-03 and 2018-19, particularly medium farmers (58.9% increase) and small farmers (31.2% increase). However, marginal farmers experienced a more modest rise in income, reflecting their limited capacity to leverage loans for substantial income growth.

Loan access has also shifted significantly, with a notable increase in the proportion of farmers accessing institutional loans. This rise is particularly pronounced among larger farmers, where 92.3% of large farmers received institutional loans in 2018-19, compared to just 71.0% in 2002-03. Marginal and small farmers also increased their reliance on institutional loans, though at a slower pace. These findings suggest that while institutional credit has become more accessible, income growth is not uniform across all landholding categories, with smaller farmers remaining vulnerable to lower income growth and greater debt burdens (Sahu et al., 2016).

Between 2002-03 and 2018-19, the distribution of loans shifted heavily in favor of institutional credit sources. The overall proportion of institutional loans increased from 57.9% in 2002-03 to 78.5% in 2018-19, as reflected in Table 2. This shift indicates the growing success of government initiatives aimed at improving financial inclusion, such as the Kisan Credit Card (KCC) scheme, rural banking expansion, and credit-linked subsidy programs (Basu & Basu, 2020).

Despite this positive trend, non-institutional loans—such as those from moneylenders, traders, and relatives—remain prevalent, especially for marginal and small farmers. For instance, while non-institutional loans accounted for 42.1% of total loans in 2002-03, they still represented 21.5% in 2018-19. Marginal farmers, in particular, continue to rely on these high-cost credit sources due to easier access and the absence of formal documentation requirements (Shah, 2014).

Table 2 also indicates that while institutional loan rates have fallen across all categories, non-institutional loan rates remain significantly higher, with moneylenders charging 35.6% on average in 2018-19. This suggests that despite growing formal credit access, marginalized farmers may still be exposed to higher costs and debt burdens, particularly if they cannot access institutional loans quickly.

The interest rates for institutional loans saw a significant decline from 16.1% in 2002-03 to 11.6% in 2018-19. Banks, which had an average interest rate of 15.2% in 2002-03, reduced their rates to 11.4% in 2018-19, indicating increased affordability and competition in the formal lending market. Cooperative banks also experienced a dramatic decrease in interest rates, from 17.7% to 8.4%, likely due to reforms aimed at improving rural cooperative institutions (Chakrabarti, 2019).

Conversely, non-institutional loan rates, particularly from moneylenders, remain alarmingly high, although they have decreased from 44.1% in 2002-03 to 35.6% in 2018-19. This decline reflects the growing competition from formal financial institutions, but it also underscores the persistent challenges for marginalized farmers in securing affordable credit (Niranjan, 2018). The reliance on informal sources like moneylenders and traders remains concerning, especially for smaller farmers who lack collateral.

A key pattern emerging from the analysis is the growing concentration of loans among institutional sources, particularly banks. Table 3 shows that by 2018-19, banks accounted for 45.5% of all institutional loans, up from 28.5% in 2002-03. This shift highlights the success of formal financial inclusion efforts and reflects increased access to affordable institutional credit for many farmers. Government loans also grew in importance, with their loan share rising from 10.3% to 17.9%, signifying the expanding role of government-backed credit schemes.

However, non-institutional loans remain an important part of the rural credit market for small and marginal farmers, especially in emergencies or when formal credit is not accessible. Relatives and friends provided 15.4% of non-institutional loans in 2002-03, but this figure dropped to 7.7% in 2018-19, indicating a decline in reliance on personal networks for credit. Loans from traders also fell from 11.4% to 2.9%, while moneylenders, though reduced, still accounted for 8.3% of loans in 2018-19.

VIII. CONCLUSION

The study findings indicate that while institutional loans have become more accessible and affordable for many farmers, significant challenges remain in terms of income growth, equitable credit access, and indebtedness, particularly for marginal and small farmers. To address these challenges, the following policy suggestions are drawn from various state-level case studies and comparative research:

1. **Strengthening Financial Inclusion**: States like Kerala and Karnataka have successfully implemented financial literacy programs to educate farmers on formal credit sources and loan management (Raj, 2019). Similar efforts should be expanded in West Bengal to ensure that all farmers, especially smallholders, are aware of affordable institutional credit options and are equipped to navigate formal lending processes.
2. **Enhancing Cooperative Credit Institutions**: States like Maharashtra have successfully revitalized their cooperative banking systems by implementing governance reforms and improving efficiency (Basu & Basu, 2020). West Bengal could adopt similar measures to strengthen its cooperative credit infrastructure, making it a more viable option for small and marginal farmers who face barriers in accessing commercial banks.
3. **Improving Access to Collateral-Free Loans**: The reliance on moneylenders among smaller farmers indicates a need for more flexible loan products that do not require extensive collateral. The Self-Help Group (SHG) model in states like Tamil Nadu and Andhra Pradesh has been successful in providing small, collateral-free loans to farmers through microfinance institutions (Niranjan, 2018). Expanding SHG and microfinance networks in West Bengal could offer a viable alternative to exploitative informal lenders.
4. **Tailoring Credit Schemes for Marginal Farmers**: Given that income growth for marginal farmers has been modest compared to larger landholders, there is a need for targeted credit schemes that cater to their specific needs. Rajasthan has implemented crop insurance-linked credit schemes that offer lower interest rates and flexible repayment terms for small farmers facing crop failure risks (Sahu et al., 2016). West Bengal could explore similar schemes to protect marginal farmers from debt traps.
5. **Promoting Agricultural Diversification**: States like Punjab and Haryana have focused on diversifying agricultural income sources, enabling farmers to reduce dependence on seasonal crop income and thereby easing their credit burdens (Shah, 2014). West Bengal could promote crop diversification and agro-based industries to help farmers stabilize their incomes and reduce their reliance on loans for day-to-day expenditures.

In conclusion, the findings of this study highlight important shifts in the rural credit landscape in West Bengal, while also revealing persistent challenges for marginal and small farmers. By adopting a combination of financial inclusion initiatives, cooperative reforms, and tailored credit schemes, policymakers can improve credit accessibility and address the unequal distribution of income growth and debt burdens across different landholding categories.

IX. REFERENCES

[1] Basu, P., & Basu, K. (2020). Rural credit in India: Challenges and policy options. Journal of Development Policy and Practice, 5(1), 13-34

[2] Chakrabarti, M. (2019). Financial inclusion and agricultural credit: A study of West Bengal. Indian Journal of Agricultural Economics, 74(3), 320-334.

[3] Nair, T. S. (2015). Moneylenders and informal credit: Still a mainstay for rural poor? Journal of Rural Development, 34(3), 351-368.

[4] Niranjan, S. (2018). The role of informal credit in agricultural finance: A study of India's rural sector. Journal of South Asian Development, 13(2), 227-244.

[5] Raj, R., Singh, A., & Nair, K. R. (2019). Fluctuations in agricultural income and the role of rural credit in India. Indian Economic Journal, 67(4), 412-431.

[6] Reddy, D. N. (2012). Institutional credit in Indian agriculture: A disaggregated study of Indian states. Economic & Political Weekly, 47(5), 55-64. https://www.jstor.org/stable/41420389

[7] Sahu, G. B., Das, T., & Rath, B. N. (2016). Institutional credit and agricultural productivity in India: Revisiting the relationship. Agricultural Finance Review, 76(2), 195-211.

https://doi.org/10.1108/AFR-06-2015-0027

[8] Shah, A. (2014). Informal credit markets and their role in rural India. World Development, 62, 121-137. https://doi.org/10.1016/j.worlddev.2014.04.004

[9] Singh, A., Animesh, & Kumar, M. (2024). Beyond the plough: Analyzing economic prosperity and debt among West Bengal farmers (2002-03 to 2018-19). International Journal of Progressive Research in Engineering Management and Science, 4(10), 298-306. https://doi.org/10.58257/IJPREMS36231

[10] Singh, A., Meena, A. L., & Bairwa, G. (2024). Punjab's agrarian economy: Tracking farmer prosperity and debt over two decades. International Journal of Progressive Research in Engineering Management and Science, 4(9), 282-289. https://doi.org/10.58257/IJPREMS35952

[11] Singh, A., Bairwa, G., & Meena, A. L. (2024). Punjab farmer's financial journey: Evaluating loan sources from 2002 to 2019. Journal of Social Review and Development, 3(2), 22-30. https://www.dzarc.com/social/article/view/572

[12] Singh, A., & Kumar, M. (2024). Credit choices in agriculture: Tracing the shift in farmer loan sources in Bihar (2002-19). Journal of Advanced Education and Sciences, 4(3), 20-28. https://www.dzarc.com/education/article/view/573

[13] Singh, A., & Atri, J. (2024). Economic shifts and financial strain: Karnataka farmers' journey in the first two decades of the 21st century. Journal of Social Review and Development, 3(2), 1-7. https://www.dzarc.com/social/article/view/548

[14] Singh, A., & Langyan, B. (2024). A study of farmer economic well-being and indebtedness in Rajasthan: A comparative analysis (2002-03 and 2018-19). International Research Journal of Modernization in Engineering Technology and Science (IRJMETS), 6(7), 1202-1210. https://doi.org/10.56726/IRJMETS60529

[15] Singh, A., & Singh, M. (2024). Economic well-being and indebtedness of farmers in Bihar: A comparative analysis (2002-03 and 2018-19). International Journal of Research Publication and Reviews, 5(7). https://doi.org/10.55248/gengpi.5.0724.1941

[16] Singh, A., Kumar, A., Bairwa, G., & Bhushan, B. (2024). The changing fortunes of Odisha's farmers: A comparative analysis of indebtedness and economic status (2002-2019). Journal of Social Review and Development, 3(1), 23-29. https://www.dzarc.com/social/article/view/550

[17] Singh, A., Bairwa, G., & Kumar, R. (2024). Credit divide: Exploring changes in institutional and non-institutional lending among Maharashtra farmers. International Research Journal of Modernization in Engineering, Technology and Science (IRJMETS), 6(10), 1-12. https://doi.org/10.56726/IRJMETS61952

[18] National Sample Survey Office. (2003). Situation Assessment Survey of Farmers, NSS 59th Round, Schedule 33. Ministry of Statistics and Programme Implementation, Government of India. https://microdata.gov.in/NADA43/index.php/catalog/104

[19] National Sample Survey Office. (2019). 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. https://microdata.gov.in/nada43/index.php/catalog/157/related_materials