

## PUNJAB'S AGRARIAN ECONOMY: TRACKING FARMER PROSPERITY AND DEBT OVER TWO DECADES

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### ABSTRACT

This study examines Punjab's agrarian economy by analyzing changes in landholding patterns, credit accessibility, income, consumption expenditure, and debt from 2002-03 to 2018-19. Using data from the National Sample Survey Office (NSSO) Situation Assessment Surveys (SAS) of 2003 and 2019, the research highlights significant shifts in landholding distribution, with a notable decline in marginal farmers and an increase in small landholders. The average landholding size decreased, while credit accessibility decreased overall, particularly for marginal farmers. The study reveals that agricultural incomes increased across all landholding categories, with marginal farmers experiencing the highest percentage growth. However, consumption expenditures grew faster than income, indicating potential financial strain. Debt burdens rose substantially, with medium farmers facing the highest increase. Interest rates on loans decreased significantly, providing some relief. These findings underscore the evolving challenges in Punjab's agrarian economy and the need for targeted policy interventions to support farmers' economic prosperity.

**Keywords-** Farmer, Punjab, Agriculture, Loan, Indebtedness, SAS, Credit

### 1. INTRODUCTION

Punjab, located in the northwestern region of India, is renowned for its fertile plains and robust agrarian economy. Bordered by Haryana, Himachal Pradesh, and Pakistan, Punjab's geographical attributes have long made it the breadbasket of India. Its rural-urban dynamics are distinctly characterized by vibrant agricultural activities and burgeoning urban centers. Agriculture forms the backbone of Punjab's economy, contributing significantly to the state's GDP and employing a substantial portion of its workforce. The state's agricultural prowess is complemented by a growing industrial sector and a dynamic service industry, both of which contribute to the region's economic diversification.

Punjab plays a critical role in India's agricultural sector. It is a leading producer of major crops such as wheat, rice, and maize, and also excels in livestock production. The state's contribution to India's food security is immense, thanks to its advanced irrigation infrastructure and the adoption of high-yield variety seeds and modern farming techniques. Punjab's agricultural households are integral to understanding rural living standards and employment quality in the region. These households not only drive agricultural output but also shape the socio-economic fabric of rural Punjab.

Studying the economic prosperity and indebtedness of agricultural households in Punjab is vital for several reasons. First, it provides insights into the living standards of the rural population, highlighting the disparities and challenges they face. Income trends among these households reveal the economic opportunities and constraints within the agricultural sector, while consumption patterns offer a window into their quality of life and purchasing power. Additionally, analyzing debt trends is crucial as indebtedness often reflects the financial vulnerabilities and coping mechanisms of farmers, particularly in the face of fluctuating agricultural incomes and unforeseen expenditures.

Understanding these dynamics is essential for ensuring the economic stability and welfare of farmers, who are pivotal to the state's and the nation's food security. This study draws on data from the 59th (2002-03) and 77th (2018-19) rounds of the National Sample Survey Office (NSSO) to track longitudinal changes in income, consumption, and debt among agricultural households in Punjab. Comparing data across these two rounds allows for a comprehensive analysis of how economic reforms, policy interventions, and market changes have impacted farmer well-being over nearly two decades.

By examining these trends, this study aims to contribute to the ongoing discourse on rural development and agricultural sustainability in Punjab. It seeks to inform policymakers, researchers, and stakeholders about the critical areas that require attention to enhance the economic resilience and prosperity of Punjab's agrarian community. Through a detailed analysis of historical and contemporary data, this paper endeavors to shed light on the evolving economic landscape of Punjab's farming households, emphasizing the need for targeted strategies to support their well-being and mitigate financial distress.

## 2. LITERATURE REVIEW

The agrarian economy of Punjab has been a subject of significant concern and analysis, particularly in light of evolving landholding patterns, credit accessibility, and increasing indebtedness among farmers. This literature review synthesizes key studies from 2008 to 2024, focusing on the dynamics of Punjab's agricultural sector and providing insights into the trends of farmer prosperity and debt over the past two decades.

Singh (2008) provides a foundational perspective on rural finance and farmers' indebtedness, examining the economic transformation and the persistence of exploitative money-lending systems in both Indian and Pakistani Punjab. Singh's study highlights how despite policies intended to improve rural credit access, the old systems of borrowing have continued to burden farmers. This "double squeezing" of agricultural households underscores a critical challenge that has persisted over decades, laying the groundwork for understanding the long-term financial strains faced by farmers.

In 2015, Chauhan and Mann addressed a more acute manifestation of agrarian distress: farmer suicides in India. Their study revealed a tragic correlation between financial distress and the high rates of suicide among farmers, attributing the crisis to issues like indebtedness and systemic neglect. Although the focus was broader than just Punjab, their findings set a crucial context for understanding the severe impacts of financial strain on farmers' mental health and well-being.

Singh and Kaur (2018) furthered this discussion by analyzing the agrarian crisis in Punjab, particularly focusing on the aftermath of the Green Revolution. Their study demonstrated that while the Green Revolution initially boosted agricultural productivity, it also led to new forms of distress as the benefits eroded over time. They pointed to factors such as declining yields, rising costs, and inadequate state support as central to the ongoing crisis. This analysis underscores the complex nature of agrarian distress in Punjab and the need for both immediate and structural interventions.

Gill (1999) provides a detailed examination of Punjab's agrarian economy, emphasizing the multifaceted nature of the crisis. Her study documents how systemic issues, including inadequate credit provision and high borrowing costs, have compounded the financial difficulties of farmers. Gill's research highlights the persistent nature of these issues and the critical need for comprehensive policy responses to address both the symptoms and root causes of agrarian distress.

Singh and Langyan (2024) offer a comparative analysis of farmer economic well-being and indebtedness in Rajasthan, which provides relevant insights for Punjab. Their study reveals significant trends in landholding patterns, credit access, and income growth, while also noting the persistence of high levels of indebtedness despite overall improvements in economic conditions. This comparative perspective helps contextualize Punjab's situation within broader regional trends, offering valuable lessons for addressing similar issues in Punjab.

Kaur (2020) extends the analysis to a detailed district-wise examination of rural indebtedness in Punjab. Her study highlights the evolution of household debt over time, providing a nuanced view of how different farmer categories are affected. The findings suggest that while overall credit access has improved, substantial challenges remain, particularly for marginalized groups. Kaur's research emphasizes the need for targeted policy interventions to mitigate indebtedness and improve financial stability among rural households.

The most recent contribution by Singh and Singh (2024) on Bihar complements these findings by exploring similar issues in another Indian state. Their study illustrates that despite improvements in landholding size and income, the debt burden continues to be a major concern. The insights from this research underscore the widespread nature of the issues affecting farmers across different regions and highlight the importance of addressing systemic financial challenges.

Together, these studies provide a comprehensive overview of the evolving agrarian landscape in Punjab. They illustrate the persistent challenges of landholding patterns, credit access, and indebtedness while also highlighting the broader context of regional and national trends. Addressing these issues requires a multifaceted approach that includes policy reforms, financial support mechanisms, and sustainable agricultural practices to ensure the long-term stability and prosperity of Punjab's farming community.

### Objective of The study

1. Examine the Evolution of Landholding Patterns and Credit Accessibility for Farmers in Punjab from 2002-03 to 2018-19.
2. Analyze Trends in Agricultural Income, Overall Income, and Consumption Expenditure Among Farmers in Punjab.
3. Investigate Indebtedness and Interest Rates on Loans Across Different Landholding Sizes in Punjab.

### Research Methodology of the Study

This study analyzes changes in Punjab's agrarian economy from 2002-03 to 2018-19 using data from the 59th and 77th rounds of the National Sample Survey Office (NSSO). The Situation Assessment Survey (SAS) of 2003, part of the 59th

round, covered 1,279 farmer families in Punjab, collecting data on income, expenditure, indebtedness, and agricultural practices. The 77th round in 2019 expanded its focus to include land and livestock holdings, covering 939 agricultural households in Punjab.

A key challenge in this analysis is the difference in definitions between the surveys. The 2003 survey defined a farmer household based on land possession and agricultural activity, while the 2018-19 survey required households to earn at least ₹4000 from agriculture. Despite these differences, comparing macro-level trends provides valuable insights.

To ensure accurate comparisons, incomes were adjusted for inflation using the Consumer Price Index (CPI) with a 2016-17 base year. This conversion standardizes incomes, allowing for a clear analysis of economic changes. Data on landholding patterns, credit access, income, consumption, and debt were examined to assess the evolving economic conditions of Punjab's farmers over these two decades.

### Analysis of the Study

#### Landholding Patterns and Credit Accessibility Among Farmers

We have estimated results presented in Table 1, which illustrate significant changes in landholding patterns and credit access among farmers in Punjab from 2002-03 to 2018-19. These trends provide critical insights into the evolving agrarian landscape and economic conditions faced by Punjab's farming community over this period.

**Table 1:** Punjab Farmers' Landholdings and Loan Accessibility Trends (2002-03 and 2018-19)

Year	Farmer Category	Farmer Households	%age Family	Avg Land (Acre)	%age Loanee
2002-03	Marginal(< 1 Acre)	937,990	50.9	0.1	56.7
	Small (1-1.99 Acre)	128,837	7.0	1.3	57.4
	Medium (2-4.99 Acre)	389,197	21.1	3.2	77.8
	Large (5 Acre & more)	388,149	21.0	10.4	78.1
	Overall	1,844,174	100.0	3.0	65.7
2018-19	Marginal(< 1 Acre)	626,560	42.7	0.1	35.1
	Small (1-1.99 Acre)	327,309	22.3	1.5	57.9
	Medium (2-4.99 Acre)	276,674	18.9	3.2	72.5
	Large (5 Acre & more)	236,596	16.1	9.1	79.2
	Overall	1,467,139	100.0	2.4	54.4
The results are estimated by the author from SAS 2002-03 and SAS 2018-19.					

**Landholding Patterns:** The data indicate a noticeable shift in the distribution of landholding categories over the 16-year period. In 2002-03, marginal farmers, those with less than one acre of land, constituted the majority at 50.9% of the total farmer households. By 2018-19, this proportion decreased to 42.7%. This decline suggests a consolidation of landholdings, with more farmers transitioning to the small landholding category (1-1.99 acres), which saw an increase from 7.0% to 22.3%. Medium landholders (2-4.99 acres) and large landholders (5 acres and more) also experienced a decrease in their respective proportions, from 21.1% to 18.9% and 21.0% to 16.1%. These shifts may reflect broader socio-economic changes, such as urbanization and the migration of rural populations to urban areas, influencing the dynamics of land ownership.

**Average Landholding Size:** The average landholding size among agricultural families has decreased over time, dropping from 3.0 acres in 2002-03 to 2.4 acres in 2018-19. This reduction could be attributed to the fragmentation of agricultural land due to inheritance laws, rising population pressures, and the sale of agricultural land for non-agricultural purposes. Smaller landholdings can impact agricultural productivity and economic viability, pushing farmers towards alternative income sources or necessitating more intensive agricultural practices.

**Credit Access:** Credit accessibility trends show varied changes across different landholding categories. In 2002-03, 65.7% of farmer households had access to loans, which declined to 54.4% by 2018-19. Marginal farmers saw a significant reduction in loan access, from 56.7% to 35.1%, highlighting a potential increase in financial exclusion for the smallest landholders. Conversely, the percentage of loanee families among small and large landholders remained relatively stable, with a slight increase for small farmers (from 57.4% to 57.9%) and a minor increase for large farmers (from 78.1% to 79.2%). Medium landholders experienced a decrease in loan accessibility, from 77.8% to 72.5%.

These trends reveal several socio-economic implications. The decline in average landholding size and the changing proportions of landholding categories suggest growing pressures on land resources and potential challenges in achieving economies of scale in agriculture. Reduced loan accessibility for marginal farmers points to increasing financial vulnerability and limited access to formal credit sources, which could hinder their ability to invest in agricultural inputs and technology. The relatively stable loan access for small and large farmers indicates a persistent reliance on credit for agricultural operations, highlighting the critical role of financial institutions in supporting agricultural livelihoods.

Overall, these findings underscore the importance of targeted policy interventions to address the unique challenges faced by different categories of farmers. Enhancing credit accessibility, promoting land consolidation, and supporting sustainable agricultural practices are essential for improving the economic well-being of Punjab's farming community. Comparing data from the 59th and 77th rounds of the NSSO provides valuable insights into the longitudinal changes and policy impacts on Punjab's agrarian economy, guiding future strategies for rural development and farmer welfare.

### Farmer's Earning and Consumption Expenditure Pattern in Punjab

The annual income and consumption expenditure of farmers is a crucial indicator of rural prosperity and sustainability in agricultural regions. In Punjab, a state known for its significant contributions to India's agricultural sector, examining the income and consumption patterns of farmers provides insights into their economic status and livelihood changes over time. This analysis leverages data from the Situation Assessment Surveys (SAS) of 2002-03 and 2018-19 to track these trends. The data reveal shifts in farmers' income from agricultural and non-agricultural sources, alongside changes in their consumption expenditure. This comprehensive analysis highlights the intricate dynamics of Punjab's agrarian economy, focusing on how different landholding categories have experienced these changes.

**Table 2:** Farmer's Annual Earning from Agricultural Activities in Punjab

Farmer_Category	2002-03	2018-19	Relative % Change
Marginal(< 1 Acre)	7,334	25,583	248.8
Small (1-1.99 Acre)	53,264	107,265	101.4
Medium (2-4.99 Acre)	114,781	184,232	60.5
Large (5 Acre & more)	324,208	571,932	76.4
Overall	99,912	161,830	62.0

Data are in rupees (₹) at constant prices of 2016-17. Estimated from SAS 2002-03 and SAS 2018-19.

According to Table 2, there have been notable changes in the annual earnings from agricultural activities among farmers in Punjab. Marginal farmers, those with less than one acre of land, saw a dramatic increase in their agricultural income from ₹ 7,334 in 2002-03 to ₹ 25,583 in 2018-19, reflecting a relative percentage change of 248.8%. This significant growth, while impressive, must be understood in the context of their low starting base and the fact that much of this income is likely for subsistence rather than market sales.

Small farmers (1-1.99 acres) also experienced substantial growth in agricultural income, which more than doubled from ₹53,264 to ₹107,265, marking a 101.4% increase. Medium and large farmers saw increases of 60.5% and 76.4%, respectively, with medium farmers' incomes rising from ₹114,781 to ₹ 184,232 and large farmers' incomes from ₹324,208 to ₹571,932. Overall, the average agricultural income for all farmer categories combined grew by 62%, from 99,912 to ₹161,830.

These trends indicate a general rise in agricultural productivity and income across all landholding categories. However, the higher percentage increases among marginal and small farmers highlight their initial low income levels and the greater relative impact of any improvements. Despite the growth, the absolute income levels for marginal farmers remain low, underscoring their continued economic vulnerability.

### Farmer Agricultural and Gross Earning Trends in Punjab

**Table 3:** Farmer Household Annual Earning Level in Punjab

Farmer_Category	2002-03	2018-19	Relative % Change
Marginal(< 1 Acre)	95,520	211,546	121.5
Small (1-1.99 Acre)	102,580	175,749	71.3
Medium (2-4.99 Acre)	149,022	263,932	77.1
Large (5 Acre & more)	355,853	667,930	87.7

Farmer_Category	2002-03	2018-19	Relative % Change
Overall	162,098	287,037	77.1

Data are in rupees (₹) at constant prices of 2016-17. Estimated from SAS 2002-03 and SAS 2018-19.

Table 3 shows the annual earning levels of farmer households, combining income from agricultural and non-agricultural sources. Marginal farmers' gross income increased by 121.5%, from ₹95,520 in 2002-03 to ₹211,546 in 2018-19. This substantial growth suggests an increased involvement in non-agricultural activities, which have become crucial for supplementing their income.

Small farmers saw a 71.3% increase in gross income, from ₹102,580 to ₹175,749. Medium farmers experienced a 77.1% rise, from ₹149,022 to ₹263,932, while large farmers' gross income grew by 87.7%, from ₹355,853 to ₹667,930. Overall, the average gross income across all categories increased by 77.1%, from ₹162,098 to ₹287,037.

The data highlight that non-agricultural income sources play a significant role in the overall economic stability of farmer households. For marginal farmers, this diversification is particularly important, as their agricultural earnings alone are insufficient for a sustainable livelihood. The growing dependence on non-agricultural income reflects broader socio-economic changes, including increased urbanization and opportunities outside agriculture.

#### Annual Consumption Expenditure Trends in Punjab

**Table 4:** Farmer Household Annual Consumption Expenditure Trend Punjab

Farmer_Category	2002-03	2018-19	Relative % Change
Marginal(< 1 Acre)	52,758	128,845	144.2
Small (1-1.99 Acre)	45,515	142,014	212.0
Medium (2-4.99 Acre)	47,026	171,001	263.6
Large (5 Acre & more)	54,813	214,624	291.6
Overall	51,475	153,565	198.3

The consumption expenditure are in rupees (₹) at constant prices of 2016-17. It is only out of pocket expenditure during the year. It is Estimated from SAS 2002-03 and SAS 2018-19.

Table 4 details the annual out-of-pocket consumption expenditure trends for farmer households. Marginal farmers' consumption expenditure grew by 144.2%, from ₹52,758 in 2002-03 to ₹128,845 in 2018-19. This increase, although significant, still places them at a lower absolute level of consumption compared to other categories, reflecting their limited financial resources.

Small farmers' expenditure rose by 212%, from ₹45,515 to ₹142,014, indicating a higher rate of growth than their income. Medium and large farmers showed the most substantial increases, with medium farmers' expenditure growing by 263.6%, from ₹47,026 to ₹171,001, and large farmers' by 291.6%, from ₹54,813 to ₹214,624. The overall average consumption expenditure increased by 198.3%, from ₹51,475 to ₹153,565.

The sharp rise in consumption expenditure across all categories, especially among medium and large farmers, suggests improved living standards and increased access to goods and services. However, the growth in expenditure outpacing income growth for many categories indicates potential financial strain, as farmers may be relying on credit or savings to meet their consumption needs.

The analysis of these trends reveals several key insights into the economic conditions of farmers in Punjab. The increase in agricultural income, although significant, is uneven across different landholding categories. Marginal and small farmers, despite showing higher percentage increases, still earn considerably less than medium and large farmers, highlighting persistent economic disparities.

The reliance on non-agricultural income sources underscores the importance of economic diversification for rural households. This trend is particularly pronounced for marginal farmers, whose agricultural earnings alone are insufficient. The increasing gross income for all categories suggests that non-farm employment opportunities have become vital for improving household income levels.

The substantial rise in consumption expenditure, particularly among medium and large farmers, indicates improved living standards but also raises concerns about financial sustainability. The expenditure growth outpacing income growth may reflect increased borrowing or depletion of savings, leading to potential long-term economic vulnerabilities. Overall, these trends highlight the complex interplay between agricultural productivity, income diversification, and consumption patterns. While there have been improvements in income and living standards, the economic well-being

of marginal farmers remains precarious, necessitating targeted policy interventions to support this vulnerable group. Enhanced access to credit, support for agricultural productivity, and opportunities for non-farm employment are essential for ensuring sustainable economic development in Punjab's agrarian sector.

### Trends of Indebtedness and its burden on Farmer in Punjab

In the agricultural sector, access to credit is essential for farmers to invest in inputs, sustain their livelihoods, and cope with economic uncertainties. Loans provide the financial flexibility needed to purchase seeds, fertilizers, and equipment, and to cover operational costs until crops are harvested and sold. Affordable credit is particularly important for all categories of farmers, as high-interest rates can exacerbate the financial burden, leading to a cycle of indebtedness. This section analyzes the trends in indebtedness, annual interest burden, and changes in interest rate patterns among farmers in Punjab, based on data from the Situation Assessment Surveys (SAS) of 2002-03 and 2018-19.

#### Farmer Indebtedness Trends in Punjab

Table 5 presents the debt burden on indebted farmers in Punjab. Over the period from 2002-03 to 2018-19, the average debt burden for all farmers increased significantly. For marginal farmers (those with less than one acre of land), the debt burden more than doubled from ₹57,261 to ₹118,577, a relative increase of 107.1%. Small farmers (1-1.99 acres) saw their debt increase by 74.8%, from ₹123,103 to ₹215,221. Medium farmers (2-4.99 acres) experienced the most substantial increase, with their debt burden rising by 170.3%, from ₹135,051 to ₹365,010. Large farmers (5 acres and more) also saw a significant rise in their debt burden, increasing by 83.6%, from ₹424,233 to ₹778,750.

**Table 5:** Debt Burden on Indebted Farmer in Punjab

Farmer_Category	2002-03	2018-19	Relative % Change
Marginal(< 1 Acre)	57,261	118,577	107.1
Small (1-1.99 Acre)	123,103	215,221	74.8
Medium (2-4.99 Acre)	135,051	365,010	170.3
Large (5 Acre & more)	424,233	778,750	83.6
Overall	172,572	358,621	107.8

Data are in rupees (₹) at constant prices of 2016-17. Estimated from SAS 2002-03 and SAS 2018-19.

The overall debt burden for all categories combined more than doubled, from ₹172,572 to ₹358,621, indicating a relative increase of 107.8%. This trend reflects the increasing reliance on credit among farmers to meet their financial needs. The sharp rise in indebtedness among medium farmers suggests a greater dependency on loans, possibly due to higher investment in agricultural inputs and infrastructure. For marginal farmers, the increase in debt, although substantial in percentage terms, is lower in absolute terms compared to larger farmers, reflecting their limited access to substantial credit amounts.

#### Farmer Annual cost of Loan Trends in Punjab

Table 6 shows the annual interest paid by farmers in Punjab. Marginal farmers' annual interest payments increased modestly by 20.6%, from ₹10,162 in 2002-03 to ₹12,253 in 2018-19. Small farmers saw a more significant increase of 50.7%, from ₹17,432 to ₹26,278. Medium farmers experienced a similar increase of 50.9%, with their interest payments rising from ₹25,035 to ₹37,783. In contrast, large farmers saw a slight decrease in their annual interest burden, which declined by 4.3% from ₹78,498 to ₹75,141.

**Table 6:** Annual Interest Paid by Farmer of Punjab

Farmer_Category	2002-03	2018-19	Relative % Change
Marginal(< 1 Acre)	10,162	12,253	20.6
Small (1-1.99 Acre)	17,432	26,278	50.7
Medium (2-4.99 Acre)	25,035	37,783	50.9
Large (5 Acre & more)	78,498	75,141	-4.3
Overall	31,427	36,780	17.0

Data are in rupees (₹) at constant prices of 2016-17. Estimated from SAS 2002-03 and SAS 2018-19.

Overall, the average annual interest paid by all farmers increased by 17.0%, from ₹31,427 to ₹36,780. The modest increase in interest payments for marginal farmers suggests limited access to larger loans, which is consistent with their

lower debt levels. The significant increase in interest payments for small and medium farmers indicates higher borrowing and possibly higher interest rates on the loans they could access. The decrease in interest burden for large farmers may reflect their access to more favorable loan terms and lower interest rates, as suggested by the data on interest rates.

#### Interest Rate Trends in Punjab

Table 7 details the trends in interest rates on loans for farmers in Punjab. For marginal farmers, the interest rate dropped significantly by 41.8%, from 17.7% in 2002-03 to 10.3% in 2018-19. Small farmers saw a smaller reduction of 14.1%, from 14.2% to 12.2%. Medium farmers experienced a substantial decrease in interest rates by 43.8%, from 18.5% to 10.4%. Large farmers benefited the most, with their interest rates almost halving, dropping by 48.1% from 18.5% to 9.6%.

**Table 7:** Trends in The Interest Rate on Loan for Farmer in Punjab

Farmer_Category	2002-03	2018-19	Relative % Change
Marginal(< 1 Acre)	17.7	10.3	-41.8
Small (1-1.99 Acre)	14.2	12.2	-14.1
Medium (2-4.99 Acre)	18.5	10.4	-43.8
Large (5 Acre & more)	18.5	9.6	-48.1
Overall	18.2	10.3	-43.4
The data is estimated by the author from SAS 2002-03 and SAS 2018-19.			

Overall, the average interest rate for all farmers decreased by 43.4%, from 18.2% to 10.3%. This substantial decline in interest rates can be attributed to various factors, including improved access to formal credit institutions, government initiatives to provide subsidized loans, and increased competition among lenders. The lower interest rates have likely alleviated some of the financial burdens on farmers, particularly larger ones, who could leverage their assets and creditworthiness to secure better loan terms. The trends in indebtedness, annual interest burden, and interest rates provide a nuanced picture of the financial challenges and opportunities for farmers in Punjab. The doubling of the debt burden indicates a growing reliance on credit, which, while necessary for agricultural investment, also poses significant risks if not managed effectively. The substantial increases in debt among medium and large farmers suggest higher investments in agricultural productivity, possibly leading to increased yields and income. However, the rising debt levels among marginal farmers highlight their vulnerability and limited capacity to repay loans, which could lead to a cycle of poverty and indebtedness. The increases in annual interest payments, particularly for small and medium farmers, reflect higher borrowing costs, which can strain their financial resources. The decrease in interest burden for large farmers indicates their ability to secure better loan terms, underscoring the advantages of scale in accessing favorable credit conditions.

The significant reduction in interest rates across all categories is a positive development, easing the financial burden on farmers and potentially encouraging investment in agriculture. The lower interest rates are likely a result of improved access to formal credit, government policies promoting affordable loans, and increased competition among financial institutions.

In conclusion, while the trends in indebtedness and interest burden highlight the growing financial challenges for farmers, the reduction in interest rates offers some relief. Ensuring sustainable access to affordable credit remains crucial for the economic well-being of farmers, particularly the marginal ones, who are the most vulnerable. Policymakers need to focus on enhancing financial inclusion, providing targeted support to small and marginal farmers, and promoting financial literacy to help farmers manage their debts effectively and invest in their agricultural productivity.

### 3. CONCLUSION OF THE STUDY

This study of Punjab's agrarian economy from 2002-03 to 2018-19 reveals significant transformations in landholding patterns, credit accessibility, income, consumption expenditure, and indebtedness among farmers. The data indicate a shift towards smaller landholdings, with a decline in marginal farmers and an increase in small landholders. Average landholding size decreased, underscoring the challenges of fragmentation and the need for efficient land use strategies.

Income analysis shows substantial growth across all categories, especially for marginal farmers, highlighting increased agricultural productivity. However, despite higher percentage increases, marginal farmers' absolute income levels remain low, indicating persistent economic vulnerability. Consumption expenditure trends suggest improved living standards, yet the rise outpaces income growth, pointing to potential financial strain and reliance on credit.

Indebtedness has risen significantly, with medium farmers experiencing the highest increase. The average annual interest paid also increased, albeit moderately, reflecting higher borrowing levels and interest rates for smaller farmers. Overall,

the study underscores the necessity of targeted policy interventions to enhance credit accessibility, promote sustainable agricultural practices, and support marginal farmers, ensuring their economic well-being and resilience in Punjab's evolving agrarian landscape.

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