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AN ANALYSIS OF THE PERFORMANCE AND IMPACT OF PRADHAN MANTRI FASAL BIMA YOJANA IN KARNATAKA

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Abstract

Agriculture in India faces high risks from unpredictable weather, pests, and natural calamities, resulting in income instability for farmers. The Pradhan Mantri Fasal Bima Yojana (PMFBY) was introduced to provide affordable crop insurance and timely compensation for crop losses. This study examines PMFBY in Karnataka from 2019–20 to 2023–24, analyzing trends in farmer enrollment, area insured, premiums paid, and claims disbursed. Using secondary data and descriptive-analytical methods, the study finds a strong positive correlation between farmer premiums and claims, indicating operational efficiency of insurance providers. Results show growing participation, especially among small and marginal farmers, while a plateau in insured area in 2023–24 highlights the need for improved outreach and inclusivity. The study also emphasizes the role of digital platforms, awareness campaigns, and streamlined administrative processes in enhancing scheme effectiveness. Practical recommendations are provided for farmers, government agencies, insurers, and policymakers to strengthen participation, timely claim settlement, and financial sustainability. The findings demonstrate that PMFBY plays a vital role in protecting farmer livelihoods, stabilizing agricultural incomes, and promoting sustainable agricultural development through coordinated stakeholder efforts.

Keywords: *PMFBY, crop insurance, farmer enrollment, claims disbursement, Karnataka, agricultural risk management*

1.Introduction:

Agriculture is a crucial sector of the Indian economy and provides livelihood to a large section of the population. However, agricultural activities are exposed to several risks such as unpredictable weather conditions, natural calamities, pests, and diseases, which often result in crop losses and income instability for farmers. To safeguard farmers against such uncertainties, crop insurance schemes play an important role by providing financial protection and reducing the adverse impact of agricultural risks.

The Government of India introduced the Pradhan Mantri Fasal Bima Yojana (PMFBY) to offer affordable crop insurance coverage and ensure timely compensation to farmers in case of crop failure. Karnataka, with its varied agro-climatic conditions, frequently faces droughts and rainfall irregularities, making effective implementation of PMFBY essential. In this context, the present study aims to review the theoretical background and importance of crop insurance schemes, analyze the trend in farmer enrollment and area insured under PMFBY in Karnataka during the last five years, examine the relationship between farmer premium contribution and claims paid, and offer suitable suggestions for improving the effectiveness and outreach of PMFBY.

Contemporary Status of PMFBY

The Pradhan Mantri Fasal Bima Yojana (PMFBY), launched in 2016, continues to be India's flagship crop insurance scheme, providing financial protection to farmers against crop losses due to natural calamities, pests, and diseases. At the national level, the scheme has steadily expanded, with increasing farmer enrollment, area insured, premiums collected, and timely claim settlements. Recent reforms have strengthened the scheme through technology, including digital portals for online enrollment, remote sensing and satellite-based yield estimation, geo-tagged loss assessment, and mobile apps for claim tracking. Coverage has also been expanded to include localized risks such as crop loss due to wild animals and waterlogging, while mechanisms have been introduced to ensure faster settlement and transparency. States like Uttar Pradesh, Maharashtra, Madhya Pradesh, and Rajasthan continue to lead in enrollment and coverage, benefiting from large cultivable areas and focused awareness campaigns.

In Karnataka, PMFBY has shown consistent growth and improved efficiency over the past five years. The state has enrolled over 27 lakh farmers, with a significant area insured and claims totalling more than ₹2,094 crore paid to farmers, reflecting increased confidence in the scheme. Digital platforms and weather-data support have been widely adopted to reduce delays in claim processing and improve accuracy. Certain districts, such as Kalaburagi, have emerged as leaders in farmer participation, while awareness campaigns and government outreach have improved coverage across major crops. Overall, Karnataka demonstrates both progress in scheme implementation and the positive impact of technological and procedural enhancements, highlighting the need to continue expanding outreach and timely financial support to all farmers.

Relevance of Crop insurance Schemes

Crop insurance is crucial for protecting agriculture against unpredictable losses and ensuring financial stability for all stakeholders. It supports farmers, the government, insurers, and the overall economy by mitigating risks and promoting sustainable agricultural growth.

1. National Economy

Crop insurance stabilizes India's agrarian economy by protecting farmers' incomes against droughts, floods, and other natural disasters. It ensures steady agricultural production, supports food security, and maintains rural demand, contributing to overall economic resilience.

2. Farmers

Crop insurance provides farmers, especially smallholders, with financial security and reduces dependency on high-interest loans. It encourages the adoption of modern farming techniques and ensures sustainable livelihoods.

3. Government

For the government, crop insurance reduces the need for ad-hoc disaster relief, stabilizes farmer incomes, and prevents distress migration, making rural livelihood support more efficient.

4. Insurance Companies
Insurance firms benefit from a large premium pool and improved operational efficiency through technology. However, high claims during disasters and regulatory constraints can pose financial challenges.

2. Review of Literature:
Pandey (2015) examined crop insurance nationally, highlighting its role in managing production and weather-related risks through schemes like NAIS and WBCIS. Building on this, the current study focuses on Karnataka to assess the importance and effectiveness of PMFBY across its diverse agro-climatic regions.
Masani (2018) found that PMFBY reduced farmers' premium burden and provided comprehensive government subsidy coverage, focusing on kharif, rabi, and horticultural crops. The study examined only the present status of Telangana, highlighting crop loss protection and agricultural distress mitigation. This provides a basis for the current study to extend the analysis to both nationwide and state-wise coverage of PMFBY.
Jamanal (2019) highlighted that insured farmers in Karnataka generally had low satisfaction with crop insurance schemes and examined correlations with socio-economic variables rather than key performance indicators. The study emphasized the need for awareness programs, simplified loss assessment, and timely claim disbursement to improve satisfaction.
Jamanal (2020) highlighted the socio-economic characteristics and climate variation perceptions of 240 insured farmers in Karnataka (2017–18), noting limited participation in formal training. The study highlighted awareness and socio-economic factors but did not address enrollment trends, insured area, premiums, claims, or ways to improve PMFBY's effectiveness.
Vibha (2021) highlighted that India's agriculture is vulnerable to natural risks, and PMFBY was launched in 2016 to reduce such risks and enhance farm income, though coverage remains below expectations. The study focused on theoretical background and state-wise coverage from 2016 to 2020, but analyzed results individually rather than overall, leaving scope for trend analysis.

3. Research Gap
While crop insurance is well-studied nationally, few studies focus on state-specific trends in Karnataka, including farmer enrollment and insured area over time. The relationship between farmer premium contributions and claims paid is underexplored, and there is limited research offering practical, local-level suggestions to improve PMFBY's effectiveness. This study addresses these gaps by combining theory, data, and policy insights for Karnataka.

Objectives of the study:
The purpose of this research is to accomplish the following objectives:

1. To analyze the trend in farmer enrollment and area insured under PMFBY in Karnataka during the last five years.
2. To examine the relationship between farmer premium contribution and claims paid under PMFBY in Karnataka.

Hypothesis
H_0: There is no significant relationship between Farmers premium contribution and claims paid under PMFBY.
H_1: There is a significant relationship between Farmers premium contribution and claims paid under PMFBY.

Scope and Research Methodology

This study uses a descriptive and analytical approach to examine PMFBY in Karnataka from 2019–20 to 2023–24. Secondary data were collected from research papers, journals, and official sources. Trend analysis, percentage changes, and correlation analysis were used. Based on these analyses, practical suggestions are provided to improve the effectiveness and outreach of PMFBY in the state.

Table 1: Farmer Enrollment and Area Insured under PMFBY in Karnataka (2019–20 to 2023–24)

Year	Applications Enrolled (lakh)	% Change (Enroll)	Area Insured (lakh ha)	% Change (Area Insured)
2019–20	**19.45**	**—**	**21.06**	**—**
2020–21	**15.88**	**–18.34%**	**15.97**	**–24.14%**
2021–22	**19.18**	**+20.78%**	**17.28**	**+8.17%**
2022–23	**26.85**	**+40.06%**	**22.88**	**+32.44%**
2023–24	**30.15**	**+12.30%**	**22.87**	**–0.04%**

Source: www.indiangovtscheme.com

% Change = (Current year – Previous year) / Previous year) × 100

Table 1 presents the trends in farmer enrolment and area insured under the Pradhan Mantri Fasal Bima Yojana (PMFBY) from 2019–20 to 2023–24. The data indicate that enrolment decreased from 19.45 lakh in 2019–20 to 15.88 lakh in 2020–21, while the area insured also declined from 21.06 lakh hectares to 15.97 lakh hectares during the same period. From 2021–22 onwards, both enrolments and area insured increased steadily, reaching 26.85 lakh applications and 22.88 lakh hectares in 2022–23. In 2023–24, applications enrolled rose further to 30.15 lakh, whereas the area insured remained almost unchanged at 22.87 lakh hectares.

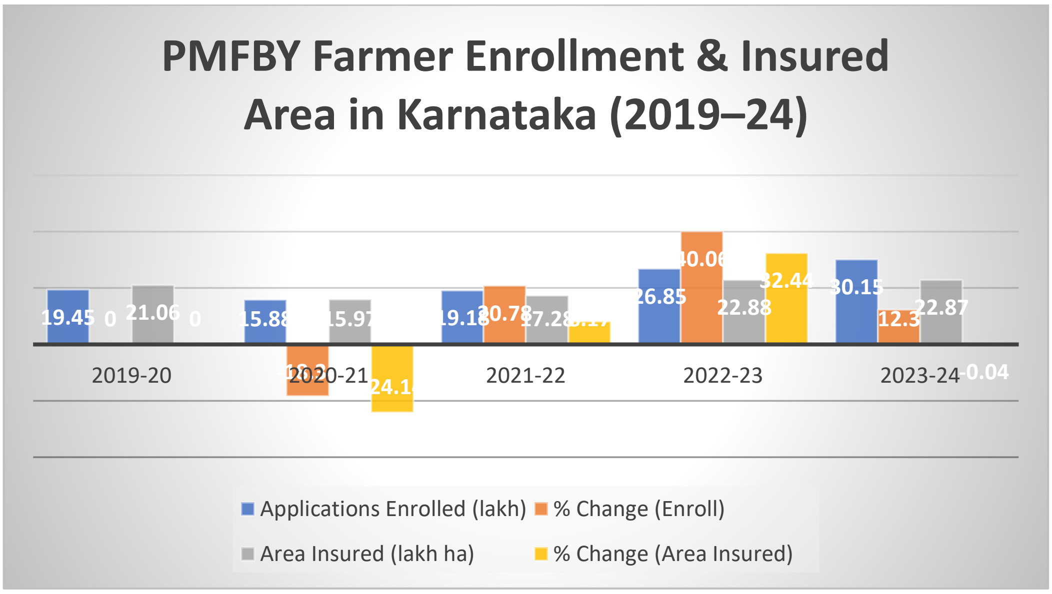


Table 2: Farmer Premium Paid and Claims Paid under PMFBY in Karnataka (2019–20 to 2023–24)

Year	Farmer Premium Paid (₹ crore)	Claims Paid (₹ crore)
2019–20	248.19	1,515.53
2020–21	216.05	1,030.32
2021–22	249.48	1,489.93

2022–23	324.28	1,555.97
2023–24	373.18	2,021.56

Source: www.indiangovtscheme.com

Table 2 presents the farmer premiums paid and claims disbursed under PMFBY in Karnataka from 2019–20 to 2023–24. The data show that premiums decreased from ₹248.19 crore in 2019–20 to ₹216.05 crore in 2020–21, while claims paid also fell from ₹1,515.53 crore to ₹1,030.32 crore during the same period. From 2021–22 onwards, both premiums and claims increased steadily, reaching ₹373.18 crore and ₹2,021.56 crore respectively in 2023–24.

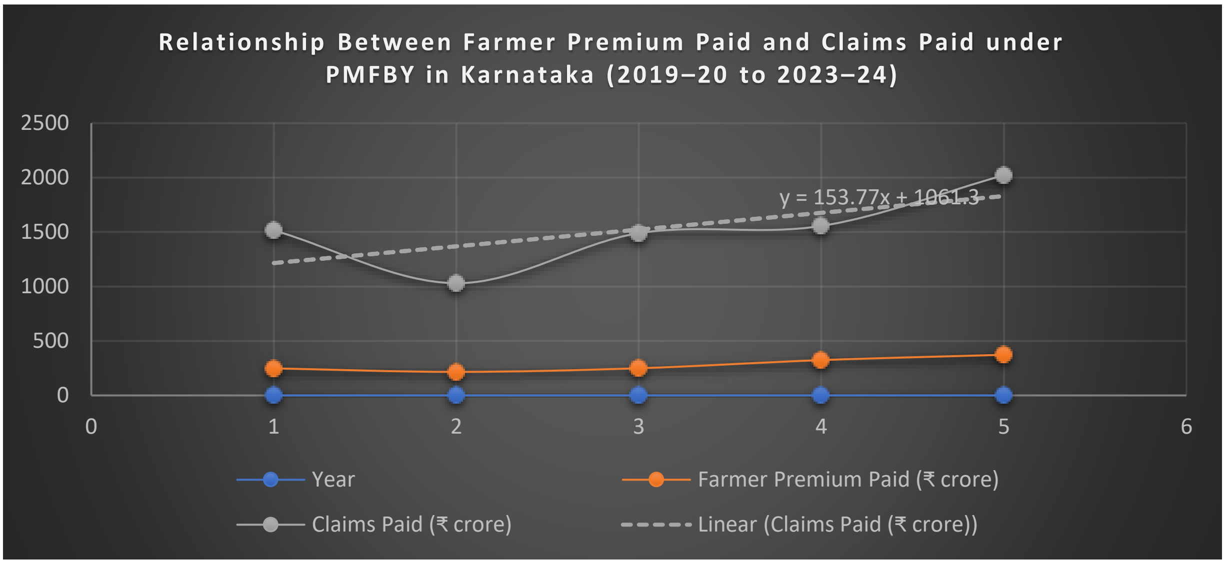
Hypothesis Testing

Table 3: Correlation Between Farmer Premium Paid and Claims Paid under PMFBY in Karnataka (2019–20 to 2023–24)

Variable 1	Variable 2	Pearson r	Interpretation
Farmer Premium Paid (₹ crore)	Claims Paid (₹ crore)	0.89	Strong positive correlation

Note: *n = 5 years (2019–20 to 2023–24)*

Table 3 shows a strong positive correlation (r = 0.89) between premiums paid and claims disbursed, indicating that higher farmer contributions are associated with higher payouts.



Results and Discussion:

Table 1 clearly indicates three distinct phases in PMFBY coverage. First, the sharp decline in 2020–21 reflects the impact of external disruptions such as the COVID-19 pandemic and operational challenges, which reduced farmer participation. Second, the period from 2021–22 to 2022–23 shows strong recovery and rapid growth, suggesting improved awareness, administrative efficiency, and policy support for the scheme. Third, in 2023–24, a divergence is observed: while enrolments continued to rise, the area insured remained almost constant, indicating a higher participation of small and marginal farmers and a possible saturation of cultivable land under insurance.

The trends observed in Table 2 reflect the impact of external disruptions in 2020–21, likely due to COVID-19, which affected enrolment, premium collection, and claim settlements. The subsequent steady growth in premiums and claims demonstrates improved scheme participation and operational efficiency in Karnataka. The strong positive correlation reported in Table 3 aligns with published data on PMFBY, showing that higher enrolment and coverage lead to increased claim payouts. Additionally, the consistent gap between premiums and claims highlights the scheme's subsidized structure, ensuring financial protection for farmers against crop losses.

Findings:

Farmers increasingly view PMFBY as a key source of financial protection, with rising enrolment, especially among small and marginal farmers, reflecting improved awareness and trust. From the government's perspective, the scheme stabilizes incomes and efficiently utilizes subsidies, though crises like COVID-19 reveal the need for stronger support during shocks. Insurance companies benefit from structured risk pooling, with a strong positive correlation between premiums and claims, yet operational challenges persist during disruptions. Policy makers face issues of land coverage saturation and must refine targeting and outreach to enhance inclusivity. Technology, awareness programs, and streamlined processes have driven recovery and growth, improving claim settlement and transparency. Overall, PMFBY demonstrates significant benefits for all stakeholders while highlighting areas for improved design, coverage, and operational efficiency.

Suggestions and Conclusion

The study of PMFBY in Karnataka from 2019–20 to 2023–24 shows that the scheme has significantly enhanced financial protection for farmers, especially small and marginal landholders. Rising enrolment, insured area, and the strong positive correlation between premiums and claims indicate growing trust and operational efficiency. To maximize benefits, farmers should enroll early, maintain accurate records, and actively engage in awareness programs. The government must ensure timely premium subsidies, expand outreach in low-enrolment districts, and provide robust support during crises. Insurance companies can improve claim accuracy and speed through digital tools, satellite data, and customized crop-specific products. Policymakers should address plateauing coverage by expanding to underserved regions and crops while monitoring trends for timely interventions. Coordinated adoption of technology, awareness campaigns, and streamlined processes among all stakeholders will enhance transparency, inclusivity, and efficiency. Overall, continued collaboration between farmers, insurers, government, and policymakers is essential to stabilize incomes, strengthen scheme sustainability, and promote resilient agricultural development.

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