



Transforming Agricultural Insurance in India: A Comprehensive Exploration of the Pradhan Mantri Fasal Bima Yojana (PMFBY)

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Introduction



Navigating the maze of agricultural risks and insurance can be daunting for farmers, especially considering the weather conditions and disaster risks in a country as diverse as India. The Pradhan Mantri Fasal Bima Yojana (PMFBY) is an agricultural insurance scheme introduced by the Government of India, which marks a significant shift in the country's approach to agricultural risk management. Aimed at providing affordable crop insurance to farmers, the scheme offers comprehensive coverage against a spectrum of disaster natural risks. This fact sheet encapsulates the scheme's key aspects, including its departure from traditional crop insurance programs, especially regarding premium payments and subsidies, and the main success factors. The document also highlights the challenges associated with the scheme's implementation and provides recommendations for better efficacy.



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Overview of the Pradhan Mantri Fasal Bima Yojana (PMFBY)



The Pradhan Mantri Fasal Bima Yojana (PMFBY) represents the latest advancement in nearly four decades of subsidized, area-based crop insurance by central and state governments. This progression began with the Comprehensive Crop Insurance Scheme (CCIS) in 1985, followed by the National Agricultural Insurance Scheme (NAIS) in 1999-2000 and its modified version in 2010. The scheme was primarily designed to: 1) enhance access to finance (production credit) for India's predominantly marginal and small-scale farmers, thereby enabling them to 2) invest in advanced seed and fertilizer technologies to boost their yields, consumption, and incomes, and 3) ensure their ability to repay loans in the event of significant crop failures. Consequently, a fundamental principle was to mandate crop insurance for all loanee farmers.

A key aspect of the Indian approach has been the acknowledgment that traditional indemnity-based, multiple-peril crop insurance (MPCI) does not suit its 140 million primarily small-scale farmers, each cultivating less than 2 hectares. India, thus, became the first country to commercially implement area-yield index insurance (AYII), offering comprehensive yield loss protection at the village or gram panchayat level to tens of millions of farmers. The AYII product is the cornerstone of the PMFBY scheme today. Additionally, since the early 2000s, India has been at the forefront in designing and implementing weather-based crop index insurance, integrated within the PMFBY as the Restructured Weather Based Crop Insurance Scheme (RWBCIS). This initiative enhances the existing model by providing coverage against adverse weather conditions, further securing farmers' investments and livelihoods.

The introduction of the 2020 Revamped Operating Guidelines under the PMFBY has brought about significant reforms aimed at making the scheme more farmer-friendly and responsive to their needs. Notable changes include the abolition of compulsory crop insurance for loanee farmers, allowing them the freedom to choose based on their specific needs and circumstances, thereby addressing concerns over autonomy and financial flexibility.

Furthermore, the introduction of additional crop covers under the PMFBY marks a significant enhancement in the scope of protection offered to farmers. These include coverage for early season germination losses, providing a safety net from the initial stage of crop cultivation. Mid-season individual farmer cover for idiosyncratic losses, such as hail damage, addresses the gap in protection against localized calamities. Additionally, the scheme has been expanded to include certain crops for post-harvest losses, offering comprehensive coverage from pre-sowing to post-harvest stages.

These reforms and additions signify a robust response to the multifaceted landscape of disaster risk in agriculture, ensuring that the insurance scheme evolves in line with the intricate nature of farmers' challenges. The data underscores the value of this evolution: for every ₹100 paid as a premium by farmers over the last six years, ₹517 was received in claims. The door-to-door farmer enrolment system and automatic claims payout for widespread calamities mean farmers can focus on their crops, knowing that support is at hand, with minimal paperwork and hassle.

TABLE 1. OVERVIEW OF THE PMFBY SCHEME

Attribute	Details
Program Start Year	2016
Maximum Premium Rates Payable by the Farmers	<ul style="list-style-type: none"> • Kharif crops: 2% max. • Rabi crops: 1.5% max. • Annual commercial/horticultural crops: 5%.
Subsidy Approach	No upper limit on government subsidy. The difference between the actuarial premium and the farmer's premium is fully covered by the government with a 50% cost-sharing between central and state governments, except the North Eastern Region (NER) where the subsidy sharing pattern between the Centre and States is in the 90:10 ratio.
Technological Integration	<ul style="list-style-type: none"> • National Crop Insurance Portal (NCIP) for administration and coordination amongst stakeholders • Use of satellite-based monitoring and remote sensing for crop health monitoring • Implementation of WINDS (Weather Information Network and Data System) for crop forecasting. • Implementation of YES-TECH, a technology-driven yield estimation system, offering methodologies, best practices, and integration insights for accurate yield assessments at the Gram Panchayat level. • Use of Common Service Centres for coverage of non-loanee farmers.
Participation by states	<ul style="list-style-type: none"> • Voluntary for states to join or opt-out. • Since inception of the scheme in Kharif 2016, 27 States/Union Territories have implemented the PMFBY in one or more seasons.

TABLE 1. OVERVIEW OF THE PMFBY SCHEME

Attribute	Details
Flexibility for State Governments	States can choose insurance companies through a transparent bidding process and notify additional crops under the scheme.
Insurance Unit Adjustment	Focus on smaller units for insurance for major crops, moving from block/taluk levels to the village/village panchayat level.
Stakeholders	<ul style="list-style-type: none"> • Central Government: Overall monitoring of implementation, advance subsidy release of their share, and technological support. • State Governments: Local implementation and customization. • Insurance Companies: Risk assessment, claim processing, and awareness campaigns. • Banks/Financial Institutions: Main point of interaction with farmer, Premium collection, farmer education, and enrolment. • Farmers: Enrolment and loss information provision in case of localized risk or post-harvest loss <p>Note: The PMFBY and Restructured Weather Based Crop Insurance Scheme (RWBIC) are underwritten by a group of empanelled public and private insurance companies.</p>
National Crop Insurance Portal (NCIP)	Central digital platform launched in 2018 for better scheme management and monitoring. Includes photos/videos of crop cutting experiments and a platform for all stakeholders for quicker dispute resolution and faster service delivery.
Achievements	<ul style="list-style-type: none"> • 37.66 crore* farmer applications enrolled in the past seven years. • 12.38 crore applicants received claims. • Integration of advanced technologies for risk monitoring. • Bundling of agricultural insurance with other insurance products. • Continuous improvements and expansions in coverage.

*1 CRORE = 10 MILLION

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In the following ways, this PMFBY scheme represents a departure from earlier crop insurance programs in India.



A crucial aspect of this new scheme is that there has been a change in the government's approach to subsidies. Unlike previous schemes, there is no upper limit on the government subsidy, meaning the difference between the actuarial payment determined by the insurance company and the premium rate paid by the farmer is entirely borne by the government. This approach involves both central and state governments, with a 50% cost-sharing component--a critical aspect of the scheme--introduced as part of the subsidy sharing. The scheme adopts a tiered premium structure. The maximum premium rate for Kharif crops is set at 2%, while it is 1.5% for Rabi crops, and for annual commercial and horticultural crops, it is 5%. Kharif crops are sown with the onset of the monsoon and harvested in the autumn, typically including crops like rice, maize, and cotton. Rabi crops, including wheat, barley, and mustard, are sown after the monsoon ends and harvested in the spring. This structure accounts for the varying levels of risk and economic value associated with different crops and seasons, tailoring the insurance coverage to specific agricultural scenarios.



Timely payment of claims is another critical issue addressed by the scheme. The 2020 reforms in the PMFBY scheme aim to improve the timeliness of claim disbursements. For transparent calculation and settlement of claims by insurance companies, a claims module named DigiClaim has been developed and implemented with effect from the Kharif 2022 season. As a result, all the claims are worked out through the NCIP instead of by the insurance company and paid to farmers' accounts using a Public Finance Management System (PFMS). The central and state governments can monitor this. Farmers do not operate the DigiClaim module; only central and state Government functionaries have access to it. However, upon settlement of claims, an SMS with a link is sent to the farmer, from which they can track the claim payment status. These reforms emphasize the need for swift and transparent resolution of disputes and claims through an enhanced crop insurance portal. The idea is to ensure that farmers facing annual non-preventable or disaster risks are incentivized to opt for insurance if claims are paid promptly. Efforts are being made to establish mechanisms that can ensure faster processing and disbursement of claims, which are vital for maintaining the trust and participation of farmers.



PMFBY heavily integrates technology for enhanced efficiency and accuracy.

It focuses on tech-driven solutions for disaster risk assessment, crop loss measurement, and scheme management. The scheme is progressively integrating advanced technologies like satellite-based monitoring and remote sensing; these technologies provide real-time data, crucial for accurate disaster risk assessment, and streamline the scheme's management. One notable innovation is a technology product designed for crop forecasting —'WINDS' (Weather Information Network and Data System). Despite its name, WINDS extends beyond mere wind-related data. It offers a comprehensive suite of weather information crucial for accurate and predictive analysis of crop yields and potential losses at the field level. Another innovation is YES-TECH, a technology-driven yield estimation system that offers methodologies, best practices, and integration insights for accurate yield assessments at the Gram Panchayat level. The move towards using technology reflects an effort to modernize agricultural insurance and make it more responsive to the actual conditions. The role of technology also extends to stakeholder interaction. Common Service Centres, established in villages, provide technological support and access, crucial for areas with limited digital infrastructure. These centers, along with the active role of Sarpanchs (village leaders) and the door-to-door enrollment app AIDE/Sahayak, ensure the scheme's reach and effectiveness even in remote and diverse regions.



The scheme has introduced flexibility for state governments in the tendering process.

Under the initial implementation of the PMFBY, state governments faced significant logistical challenges due to the annual tendering process. The revised guidelines allow companies to enter into three-year contracts with state governments. This adjustment has resulted in significant enhancements in the system. Insurers are now more motivated to invest in establishing branch offices and hiring staff. Furthermore, there is a heightened focus on educating farmers, increasing awareness about the scheme, and participating in crop cutting experiments, among other activities.



The PMFBY scheme introduces significant improvements by refining the insurance unit size and incorporating individual-level risks. Unlike previous initiatives that applied larger geographical units, leading to generalized assumptions of crop loss, PMFBY emphasizes more granular, village-level units. This shift enables a more precise and personalized evaluation of crop losses, addressing the critical issue of basis risk. Additionally, within the framework of the RWBCIS, substantial investments are being directed towards the Weather-based Crop Insurance Scheme (WINDS) to enhance the network of weather stations and rain gauges. This expansion aims to increase coverage density and ensure that the insured units are smaller and more accurately representative of specific agricultural conditions.

The scheme's implementation is structured around a panel of insurance companies set up by the central government, predominantly consisting of State Agricultural Insurance Corporations. This structure is vital given the unique market dynamics of agricultural insurance, where private insurers often find it unprofitable. Thus, the scheme combines a preventive approach with the financial realities of agricultural insurance, involving farmers, insurance companies, banks, and central and state governments in a cohesive strategy.



Key perils covered by the PMFBY scheme



Standing Crop (Sowing to Harvesting): Comprehensive risk insurance to cover yield losses due to non-preventable risks such as:

- Drought, Dry spell, Flood, Inundation
- Widespread Pests and Disease attack
- Landslides, Fire due to natural causes
- Lightning, Storm, Hailstorm, Cyclone



Prevented Sowing/Planting/Germination Risk: Coverage for insured areas prevented from sowing, planting, or germination due to deficit rainfall or adverse seasonal/weather conditions.



Post-Harvest Losses: Coverage for up to two weeks from harvesting for crops must be dried, cut, and spread in bundled condition in the field. Specific perils covered include:

- Hailstorm
- Cyclonic rains
- Cyclone
- Unseasonal rains



Localized Calamities: Coverage for loss/damage to notified insured crops resulting from identified localized risks affecting isolated farms in the notified area. Perils covered include:

- Hailstorm
- Cloud burst
- Landslide
- Natural fire due to lightning
- Inundation



Add-on coverage for crop loss due to wild animal attacks: Optional coverage is available for crop loss due to attack by wild animals where the risk is substantial and identifiable.

Key stakeholders involved in implementing the PMFBY



The PMFBY scheme is a collaborative effort involving the Agricultural Insurance Corporation of India, select private insurance companies, banks, central government, state governments, and insurance agents. Each stakeholder plays a critical role, from policy formulation to ground-level implementation, ensuring the scheme's comprehensive reach and effectiveness.



Central Government: Responsible for the overall monitoring of the scheme, releasing subsidies, and aiding states with technological resources for data collection. It also plays a role in capacity building and public awareness. The Department of Agriculture, Cooperation and Farmers Welfare takes a pivotal role by managing the PMFBY, maintaining the National Crop Insurance Portal along with the Central Technical Support Unit (TSU), and managing crop yield databases. Additionally, this department is tasked with preparing operating guidelines for both PMFBY and RWBCIS, ensuring the schemes' effective implementation and adherence to policy standards.



State Governments: Manage local implementation, form technical and grievance redressal committees, conduct awareness campaigns, and provide data to insurance companies. They are vital to customizing the scheme to local needs. State Governments also play a major role in premium subsidy provision.



Insurance Companies: Undertake risk assessment, process claims, and ensure direct disbursement to farmers. They are also involved in awareness campaigns and public education about the scheme.



Banks and Financial Institutions: Act as key intermediaries in the scheme, collecting premiums, educating farmers, and helping in the enrolment process. Their role is vital in integrating farmers into the formal financial system and ensuring that the benefits of the scheme are widely understood and accessible.



Farmers: Have the choice to enrol in the scheme and are responsible for providing the necessary documentation and information for enrolment and claims.

Participation



Participation in the scheme initially varied among the states. Several states adopted the scheme initially, while others, like Punjab, have yet to implement it. The scheme's design allows for flexibility in adoption, with about 26 states initially participating. Over time, the scheme has undergone several changes, notably in 2018 and 2020, to address emerging challenges and constraints, such as financial difficulties faced by state governments and delays in payments from insurance companies. **As of 2020, the scheme evolved to be entirely voluntary**, including for loanee farmers (farmers in the notified area with a Crop Loan account/ Kisan Credit Card account) who were initially under compulsory coverage. This shift was a potential response to the realization that mandatory coverage could be counterproductive if payments were delayed, diminishing farmers' incentive to participate.

The scheme is not limited to smallholder farmers; it is designed to be inclusive, covering all types of farmers, whether smallholders, sharecroppers, tenants, or loanee farmers. Regarding crop coverage, the scheme initially focused on Kharif and Rabi food and oilseed crops and annual commercial and horticultural crops. In 2020, the scope was further expanded to allow state governments the flexibility to include additional crops under the scheme, reflecting the diverse cropping patterns across India. This comprehensive coverage of crops, adaptable to the specific agricultural context of each state, is a hallmark of the scheme's innovative approach.

The scheme employs various channels to educate farmers, including door-to-door campaigns, mobile apps, and media broadcasts. Local community meetings and digital platforms are also utilized for widespread awareness. The focus is on ensuring farmers are well-informed about the scheme's benefits and procedures.



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Ensuring Financial Benefits Reach Farmers



Direct benefit transfers are the primary mechanism for ensuring financial benefits reach beneficiaries, particularly farmers. This method has become increasingly prevalent in many of India's schemes. The Aadhaar (National ID) system is crucial in this process. The Aadhaar ID plays a pivotal role in the PMFBY scheme, enabling precise verification of farmer identities, reducing the chances of fraudulent claims and ensuring that the benefits reach the rightful recipients. Its integration into the PMFBY framework streamlines the application and claims processes, facilitating faster disbursement of insurance payouts. Additionally, the use of Aadhaar links farmers' financial and land records directly to their insurance profiles, simplifying the underwriting process and improving the overall accessibility of crop insurance. Although its adoption across states has faced challenges, it is now mandatory for farmers to have an Aadhaar card. This mandate ensures that every participant, whether the farmer, insurance agent, bank, or state government, is identified by the Aadhaar number, streamlining the transfer process.



Overcoming Delays and Ensuring Accurate Disbursement

While delays in disbursement are not uncommon, the unique identification system ensures that the benefits reach the correct individuals. This method is a significant improvement in ensuring disbursement accuracy.



Integration with the National Crop Insurance Portal

The NCIP, operational since 2018, has dramatically improved the management and monitoring of insurance schemes. This portal includes photos and videos of crop-cutting experiments, an assessment method employed by governments and agricultural bodies to accurately estimate the yield of a crop or region during a given cultivation cycle. The portal also provides a platform for insurance companies to raise and swiftly respond to disputes, enhancing transparency crucial in handling disputes about yield and crop loss calculations. One of the major achievements and improvements under PMFBY is the systematization where all banks now enter/upload all farmer insurance details into the system each season/year, and manage farmer premiums and subsidies directly through the system. Similarly, all the Comprehensive Crop Estimation Survey (CCE) results are fed into the NCIP, enabling automatic calculation of claim settlement amounts and directing payments to each insured farmer's Kisan account, streamlining the process and ensuring transparency and efficiency in the disbursement of claims.



Seasonality Discipline and Implementation Framework

A critical component of the PMFBY scheme's operation is 'seasonality discipline,' which outlines specific timelines for each stakeholder's obligations within the implementation framework. This structure mandates when state governments release data, when insurance companies process claims, and when farmers submit their insurance proposals. Such regimented timelines are essential for the smooth operation of the scheme.



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PMFBY's Achievements



The PMFBY scheme's most notable success made agricultural insurance more accessible and beneficial to farmers. It has substantially increased insurance coverage among farmers, with millions enrolled and substantial claims paid out. Over the past seven years, around 37.66 crore* farmer applications have been enrolled, and more than 12.38 crore (provisional) farmer applicants have received claims. The quantity of applications from farmers has experienced a substantial increase, rising by 33.4% and 41% annually for 2022-23 and 2021-22, respectively. Additionally, there was a notable surge of 28.9% in the number of farmers insured under the scheme for the 2023 Kharif season (up to November 30, 2023) compared with the 2022 Kharif season. Furthermore, for the Rabi season of 2022-23, claims amounting to Rs. 3,878 crore have been disbursed to 7.8 lakh farmers. This reflects the scheme's ability to revamp and integrate with other agricultural initiatives, moving towards a unified national approach.



Mandatory integration of digital frameworks for states is a significant change in the 2020 guidelines. This change is crucial as it involves digitizing insurance unit-wise administrative/revenue hierarchy along with the scheme, which varies across states. States that have better integrated their digital infrastructure, particularly land records, have improved the scheme's implementation. The portal's integration with Aadhaar and direct benefit transfers has streamlined the process, making it more efficient and reducing the risk of over-insurance. Central Government's initiatives, such as the Digital India Land Records Modernization Programme, and state government initiatives, such as Karnataka's Bhoomi Online portal (established in 2001, it digitizes land records, offering easy access to these records online on demand), have been pivotal in developing computerized land records. Integration of these digital land records is essential for agricultural insurance companies to access beneficiary details and align incentives.



The implementation of technology in managing agricultural risks is another significant achievement. The scheme has successfully integrated advanced technologies for risk monitoring, improving the accuracy and efficiency of the insurance process.



Bundling agricultural insurance with other insurance products, like personal accident and life insurance, is crucial. This approach, including the Unified Insurance Fund, makes agricultural insurance mandatory while offering optional coverage in other areas, potentially increasing the scheme's uptake. The PMFBY's approach to bundling agricultural insurance with other insurance products is a strategic measure to provide comprehensive protection against various risks, including those arising from disasters. This bundling not only addresses the direct impacts of disasters but also the cascading effects on farmers' personal and financial well-being.



Lastly, the **scheme's adaptability and responsiveness to feedback**, leading to continuous improvements and expansions in coverage, stand out as critical successes. For example, the inclusion of coverage for pre-sowing risks and wild animal attacks in Himachal Pradesh was a response to specific challenges faced by farmers in the region. The scheme's success hinges on its ability to address India's diverse and localized nature of agricultural risks.

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Challenges



- Trade-offs involved in operationalizing the scheme.** One of the primary trade-offs is the balance between affordable premium rates for farmers and the financial burden on the government. The scheme significantly lowered premium rates to make crop insurance accessible to farmers. This trade-off is a classic example in the political economy of agricultural insurance, involving considerations from both executive and bureaucratic perspectives. This financial challenge is a crucial aspect policymakers have to contend with in designing and implementing such schemes. The removal of the cap on government subsidies further intensifies this trade-off but aims to encourage more comprehensive coverage and uptake of the insurance.
- The scheme's success varies across states, influenced by factors such as financial constraints, degree of voluntary participation, the political economy of agriculture, state-specific challenges, and the extent of digital integration.** States with advanced digital frameworks are expected to implement the scheme more effectively. The PMFBY recognizes the need for flexibility and adaptability to accommodate the diverse agricultural landscapes and risks across states. Financial constraints and the degree of voluntary participation by states also significantly affect the implementation and success of the scheme.
- Given the overlapping responsibilities of local administrators managing various programs, the concept of scheme fatigue is acknowledged.** This fatigue underscores the importance of efficient coordination and streamlined processes within the agricultural insurance ecosystem.
- Private insurers' involvement needs to be improved, but there is potential for growth, especially with advancements in technology like satellite-based measurements.** A balanced approach to risk assessment, ensuring a mix of 'good' and 'bad' clusters for insurance, is being implemented as part of the 2020 guidelines. This balance is crucial to avoid problems like adverse selection and to encourage more private players to participate.
- Integration with the NCIP has necessitated additional training for various stakeholders involved,** highlighting the complexity of managing multiple schemes simultaneously.
- Farmers have expressed concerns about post-harvest losses, highlighting the limitations of a two-week window to report losses and the struggle with unseasonal rains damaging stored crops.** These challenges underscore the complexities of individualizing a scheme in a developing country, where every detail matters, and every loss profoundly impacts a farmer's livelihood.

🚩 **They are overcoming skepticism and building trust.** Past experiences with insurance schemes have made farmers wary. The scheme emphasizes transparent communication and the involvement of non-financial intermediaries to foster trust. Demonstrating tangible benefits and ensuring effective claim settlements are crucial in increasing participation and building trust. This is achieved through various familiar channels, including banks, which are frequented by farmers and act as authorized channel partners. Local offices of insurance companies are established to address any grievances directly, providing a physical presence that fosters trust. The scheme also leverages digital platforms like the NCIP and door-to-door enrolment AIDE app, offering farmers an accessible way to engage with and understand the scheme. Additionally, the involvement of village Sarpanchs in spreading awareness and guiding farmers is instrumental in building local trust and facilitating adoption.

🚩 **Anti-selection:** In Uttar Pradesh, a significant challenge has emerged over the past two years since the PMFBY scheme was made voluntary for all farmers: the issue of major anti-selection. This problem, previously highlighted by the World Bank in 2019, particularly in states like Maharashtra, has now become a pressing concern in UP, requiring targeted strategies and interventions to address effectively.



Intention to Adapt



Strengthening Risk Coverage Flexibility

The scheme should continuously adapt to incorporate coverage for unique and additional disaster risks. This would require a dynamic approach to risk assessment, ensuring that the insurance protection is not just broad but responsive to the specific agricultural landscape of each area.



Improving Crop Loss Management and Dispute Resolution

The focus should be on enhancing the mechanisms for crop loss management and developing a more robust and transparent system for resolving disputes related to crop loss measurement. This could be particularly crucial in remote or institutionally weak regions where implementing such measures is inherently more complex.



Capacity Building and Training

With the integration of satellite-based monitoring and remote sensing in yield estimation, there is a pressing need for comprehensive training and capacity-building programs targeted at government insurance entities and stakeholders across the spectrum, including insurance agents, government officials, and farmers. These initiatives should aim to deepen their understanding of advanced technological tools and the scheme's operational framework.



Enhancing Policyholder Awareness and Trust

Extensive awareness campaigns should educate farmers about the scheme's benefits, the simplicity of enrollment, and the minimal paperwork involved. Data showing farmers' tangible benefits from the scheme should be highlighted.

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