
SOWING IN UNCERTAINTY: THE CLIMATE INSURANCE GAP FOR INDIA'S FARMERS

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1. Introduction

The climate change issue is in fact one of the major problems that Indian agriculture has to deal with. On top of that, India has to deal with the difficulty of shrinking landholdings, degrading natural resources and monsoon dependency. A report by NABARD titled *Climate Change and Risk Management in Indian Agriculture* has given strong proof that Indian average temperatures have been steadily increasing and that an increase of 1.57°C is likely to occur under the RCP4.5 scenario by the year 2099.¹ As a result, India is experiencing more frequent and intense weather events such as droughts, floods, heat waves and cyclones. Despite this, the impacts of these shocks are not the same in all regions. The varied agro-climatic zones have their specific climate-related problems: coastal zones are becoming more and more susceptible to cyclones, saline-water intrusion and flooding; the arid and semi-arid regions of western and central India are suffering from drought cycles of increasing frequency; and the Indo-Gangetic basin is now seeing at times droughts, heat waves and floods co-existing, thus making agriculture less and less viable.²

A NABARD report mentions that a single year of drought conceivably leads to a decrease of household incomes by 25-60%, to the taking of debts, to the selling of animals, and even to the loss of properties. As the weather becomes more extreme, farmers would have lost their savings and their loan interests would have gone up. Farmers would find themselves in a much worse and more vulnerable position which would expose them to the cycles of chronic indebtedness followed by death or suicides in some instances. Under such conditions, agricultural insurance schemes are not only playing the role of financial intermediaries but also becoming a vital social safety net that can actually help the farmers to bounce back from the climate-induced shocks.

¹ P. S. BIRTHAL, *Climate Change and Risk Management in Indian Agriculture* (Nat'l Bank for Agric. & Rural Dev., Res. & Pol'y Series No. 4/2022) (2022)

² UNDP, *Data-Driven Insurance: Making India's Smallholder Farmers More Resilient* (blog post, Nov. 3, 2021)

Nonetheless, the Pradhan Mantri Fasal Bima Yojana (PMFBY) has seen continuous improvements in its applications, yet a significant difference between planned coverage and actual coverage still exists. The initiative intended to cover all aspects of insurance but surprisingly small and marginal farmers, who are the most vulnerable to the impacts of climate change, are still not participating to the full extent. Financial difficulties, ignorance, high premiums, and long waiting times for claims have all played their part in reducing the insurance outreach effectiveness. Formal climate insurance is still not accessible to a lot of farmers, who, despite the growing risks, have to resort to informal coping strategies that are only temporarily available and provide just short-term relief.

The examination of climate vulnerabilities that involved all Indian Agro-ecological zones, the connection of socio-economic impacts with farmers' lives and the constant insufficiency of agricultural insurance were recognized as major problems needing solutions. It is only by negotiating with these issues that India's risk management framework will be able to, first, become more effective and, second, the tools for building resilience will be provided to the people who need them the most.

2. Defining the Gap

The insurance reforms in India were intended to create a wide net for protection, but the actual coverage is still quite small. According to NABARD's report, the number of formal crop insurance policies is not as high as anticipated (the nationwide sample indicates that only 6.23% of households are insured³, and risk-transfer forms only 10% of the farmers strategies, whereas more than 75% rely on mitigation measures such as livestock or orchard⁴. In those cases where insurance is applied, it adds only a little to the incomes (~+6.9%) while lessening the risk downside (~-6.8%);⁵ moreover, such increments are still lower than those brought by irrigation (~+19.7% income, ~-13.7% downside risk).⁶ This unfortunate situation is caused by a number of barriers on both demand and supply sides such as low pricing of insurance, information sparsity, high transaction costs, and delays in claims settlements, which make it impossible for the most vulnerable farmers to get the necessary protection and thus trap them in the cycle of

³ P. S. BIRTHAL, *Climate Change and Risk Management in Indian Agriculture* 78 (Nat'l Bank for Agric. & Rural Dev., Res. & Pol'y Series No. 4/2022) (2022)

⁴ Id. at 80–82

⁵ Id. at 81–83

⁶ Id. at 82–84.

debt, loss of assets, and continuous distress.⁷

3. Decoding India's Crop Insurance Regime: Evolution, Functioning, and Performance Challenges

The Indian government has come up with a modern crop-insurance infrastructure that is based on the PMFBY along with the RWBCIS, and such infrastructure is quite a daring undertaking by the government to convert disaster-prone and economically-stable farmers' areas into death-risk and economically-stable farmers' areas. The PMFBY being a price-friendly insurance scheme, includes premiums that are highly subsidized at the rate of 2%, 1.5%, and 5% for Kharif, Rabi, and commercial and horticultural crops respectively, where the remaining actuarial cost is taken up by the Central and State Governments. Such a financial setup also comes with a long list of risks included, such as planting being prevented, natural disasters causing yield reduction, and even seed losses after harvesting (up to fourteen days) covered. But still, the project relies on the area-yield concept, where not the individual field's harvest is assessed but through CCEs done in the entire area of notified regions. The World Bank's ESSA report says that this system, while being easy from an administration point of view, is still cursed with poor CCE execution, varying levels of technology adoption, and yield estimation inaccuracies which all lead to claims settlements being not only slow but also less credible⁸. To improve the situation, the RWBCIS was introduced, which based payments on weather indices changes as measured by Automatic Weather Stations. Nevertheless, in this case too, limited AWS coverage and calibration problems often lead to high basis risk, leaving farmers compensated for weather conditions that do not match their actual field experiences.

The new techniques are basically the same as those innovations that were tried out earlier, including the Comprehensive Crop Insurance Scheme (CCIS), National Agriculture Insurance Scheme (NAIS), and Modified NAI, which mainly shared the setbacks of uniform premiums, slow and unclear claim processes, and area assessment that was often unable to identify individual losses. According to Rajeev and his team, the farmers' dissatisfaction with loss measurement has been farmers' no-trust factor even today. Furthermore, the trends in performance and coverage, which are uncovered by the insured area, reveal the system's frailty: the insured area fell from 57.2 million hectares during 2016-17 to 47.5 million hectares in the

⁷ Id. at 88–95

⁸ World Bank, *Environmental and Social Systems Assessment for the Pradhan Mantri Fasal Bima Yojana* (2023)

following year 2017-18, whereas the ambitious PMFBY covered less than 25% and thus was still behind the global count. There are still large discrepancies at the state level according to the statistics, which draw their lines from premiums collected and claims paid, the very factors that cause insurers to give up on high-risk areas and farmers to abandon the scheme because of slow payments. NABARD's analysis backs this up by providing evidence of the low demand for formal insurance as only 6.23% of farmers in India opt for crop insurance, which signifies that the risk transfer tools have minimal influence on the risk management strategies of households.⁹ All these factors lead to the conclusion that PMFBY and RWBCIS, although they mark a potential turning point in India's effort to cope with the adverse effects of climate change on agriculture, are still operationally and institutionally challenged due to continual design flaws and limited capacities. All the points above speak in concert to the fact that PMFBY and RWBCIS though being big steps in the right direction for India's agricultural resilience still have to deal with inherent and sometimes even deep-seated design issues, operational bottlenecks, and uneven institutional capacity which in the end results in not being able to provide the necessary protection that the farmers of India's climate-vulnerable areas need so urgently in terms of both time and fairness.

4. Bridging the Gap

The project to overhaul the severely dysfunctional crop-insurance system of India will call for a comprehensive and synergistic approach that apart from technology also the backing and the longevity of institutions. The ESSA report suggests that the incorporation of technology can bring about these gigantic benefits in terms of speed and transparency drones and satellite imaging can take the place of the slow and manual Crop Cutting Experiments, AI-based methods can very quickly give yield estimates, and the amalgamation of platforms like the WINDS portal can smoothen the transfer of data between different offices.¹⁰ The above-mentioned devices and methods will not only eliminate any delay but will also create a situation where the very few chances for crooked practices, which are the main cause of distrust and the slow payments, will be wiped out.

The development of parametric (index-based) insurance is a major supporting pathway that

⁹ P. S. BIRTHAL, *Climate Change and Risk Management in Indian Agriculture* (Nat'l Bank for Agric. & Rural Dev., Res. & Pol'y Series No. 4/2022) (2022)

¹⁰ World Bank, *Environmental and Social Systems Assessment for the Pradhan Mantri Fasal Bima Yojana* (2023)

activates the issuance of automatic payments in case of exceeding the set limit of rainfall, temperature, or other weather indices.¹¹ The advantages of - quick payments, low administrative costs, and clear indicators - recommend it as the best choice for the climate-threatened areas. Nevertheless, challenges persist: basis risk is still a problem due to the absence of and the irregular location of weather stations that have been calibrated, and the issue of farmers not being able to grasp the index triggers is still there, reflecting the communication gaps that have been noted in different states.

In conclusion, the last-mile delivery system of India's enormous microfinance network, cooperatives, SHGs, and farmer collectives are the main players in this whole scenario. Smallholders, women, and tenant farmers, who are usually the PMFBY's last beneficiaries due to land-title and institutional-credit barriers, are the very groups that the organizations are already collaborating with. The trust that MFIs and grassroots organizations such as DHAN Foundation and IBISA have established for financial literacy can be used to facilitate the simultaneous provision of more insurance and micro-loans, thus benefiting the most vulnerable through increased coverage, awareness, and insurance. The merger of the two innovations in the institutions and technology fields could change crop insurance from a sluggish, bureaucratic system to a quicker, fairer, and climate-ready risk management tool.

5. Policy recommendation

To bolster the crop-insurance system in India, the government is required to put into action a series of reforms that will tackle the operational issues directly as indicated by the recent studies and field evaluations.¹² One of these reforms is, probably, the most significant one and it is the introduction of claim settlement deadlines with strict service-level standards, financial penalties for insurers or state agencies that do not meet the deadlines a step that is absolutely necessary to win back farmers' trust in the PMFBY scheme. Not far from the need for the enforcement of claims deadlines is the matter of streamlining the enrollment process for non-loanee, tenant, and sharecropper farmers who are one of the most neglected groups because of their land-title and documentation barriers. This can happen through allowing insurance without formal credit, self-declaration methods, and using local institutions for tenancy

¹¹ UNDP, *Data-Driven Insurance: Making India's Smallholder Farmers More Resilient* (blog post, Nov. 3, 2021)

¹² M. Swain, *Crop Insurance for Adaptation to Climate Change in India*, Asia Research Centre Working Paper No. 61 (London School of Economics & Political Science, 2014),

verification.

The topic of transparency in yield evaluation and claim calculation is an issue that has to be faced first: the public visibility of CCE data, yield records digitization, and the establishment of computation methods that are uniform are some of the actions that can significantly reduce the number of disputes and increase the level of trust. The government, therefore, has to increase its spending to monitor the risks in rural areas such as Automatic Weather Stations, remote-sensing tools, and satellite-linked platforms to the extent of reducing basis risk and producing more reliable, real-time data for both PMFBY and index-linked products. The integration of all these actions will eventually result in the creation of a crop insurance system in India that is more inclusive, transparent, and a good fighter against climate changes, thereby giving farmers prompt assistance amidst the ever more unstable agricultural conditions.

6. Conclusion

India has to deal with grave climate challenges, such as drought and unpredicted rains, and the need for a crop insurance system that is operational and caters to all farmers is a necessity that can hardly be emphasized. The study has come to the conclusion that the two programs PMFBY and RWBCIS are good examples of big institutional initiatives, but persistent problems like difficulty in measuring the damage accurately, lack of outreach, settlement of claims, and delivery to the last point hinder their effectiveness the most particularly for the small and marginal farmers who are the most affected by climate shocks. The establishment of genuine opposition will require far more than some small adjustments; it envisions a system that is fast, open, fair, and able to convert theoretical protection into real-life protection.