# Agriculture Insurance In India

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***Abstract-*** *Indian agriculture dependent on mansoon which is always flexible. It leads to operating risk in cultivation of different crops. Natural calamities may effect on the yield from the agriculture sector. To cover the risk which may occur in future, there is need to more provisions and crop insurance is only mechanism available to safeguard against the production risk in agriculture. For full filling need the government of India made experiments & efforts by introducing various crop insurances*

***Keywords****-* crop insurance, agriculture, national agriculture insurance in India.

## I. INTRODUCTION

India's agricultural sector, which contributed 16 percent of the country's GDP in 2017supports the livelihoods of 43.9 percent of the population. employement in this sector has decreased by 10 percentage points within a decade, from 53.1 percent in 2008 to 43.9 percent in 2018The sector is facing manifold problems such as crop failures, non-remunerative prices for crops and poor returns on yield. Agrarian distress is so severe that it is pushing many farmers to despair about 39 percent of the cases of farmer suicides in Farmers are vulnerable to agricultural risks and thus need an insurance system. While India has had one since 1972 the system is rife with problems such as lack of transparency, high premiums, and non-payment or delayed payment of claims. India's first crop insurance scheme was based on the individual farm approach which was later dissolved for being unsustainable. The next insurance scheme was then based on the homogeneous area approach In1985 the Comprehensive Crop Insurance Scheme was implemented for 15 years improvements were made based on the area approach linked with short-term crop credit. Its successor the National Agricultural Insurance Scheme was implemented to increase the coverage of farmers, both those with existing loans and those without. However, despite the modifications the scheme failed to cover all farmers, and in Kharif season 2016 the GoI formulated the Pradhan Mantri Fasal Bima Yojana (PMFBY) to weed out the issues in the previous crop insurance schemes.

## II. THE SIGNIFICANCE OF THE STUDY

The present study is significant for potential benefeciaries from those villages which not have much awareness of crop insurance scheme. it will also helpful to small and marginal farmers to protect their interest in crop against natural calamities and getting benefits under this scheme. It will aslo assist the insurers, banker &policy makers for policy prescription &policy intervention.

### Objective of the study

- Farmers are vulnerable risks to agriculture risk and thus need an insurance system.
- Increase in use of pradhana mantra fasal bhima yojana(PMFBY)
- Uses of PMFBY.

### Need of the study

- Crop insurance coverage by(PMFBY)
- Efectiveness of PMFBY over other insurance scheme.

### Scope of the study

To discuss the key actuarial consideration while

- PMFBY
- Performance of PMFBY, RFBK, AIC.

### Reasons for agriculture insurance

Indian agriculture has been progressively acquiring a small farm character. The total number of operational holdings in the country increased from 138 million in 2010–11 to 146 million in 2015–16 an increase of 5.33 percent the claim that the average landholding size has declined from 1.15 hectares in 2010–11 to 1.08 hectares in 2015–16 .To be sure, a small landholding is not automatically a deterrent to productive farming. In China, for example, despite a small average land size of 0.6 hectare, farmers have achieved higher productivity due to efficient. In India such small average holdings do not allow for surpluses that can financially sustain families. India's primary failure has been its inability to capitalise on technology and efficient agricultural practices, which can ensure surpluses despite small landholdings. India's farmers need insurance for another reason the commercialisation of agriculture leads to an increase in credit needs, but most small

and marginal farmers cannot avail credit from formal institutions due to the massive defaulting caused by repeated crop failure. Moneylenders too are apprehensive of loaning money, given the poor financial situation of most farmers. According to the All India Debt and Investment Survey2013–14 indebtedness is more widespread amongst cultivator households than their non-cultivator counterparts. In 2014, 46 percent of the cultivator households were indebted, with an average amount of INR 70,580 in debt.[1] Institutional agencies (commercial banks, regional rural banks or insurance companies) held 64 percent of agricultural debt in 2013, while non-institutional agencies (moneylenders, family or friends) held the remaining 36 percent Professional moneylenders held the maximum share of agricultural debt (29.6 percent), indicating that rural households still depend on them for easy credit. A third reason is related to climate change: higher incidence of extreme weather events aggravates agrarian distress. Floods and droughts leave farmers in a period of flux. A lack of preparedness makes them vulnerable to harvest losses, especially given the money already paid for capital, e.g. seeds and fertilisers. This results in fluctuating incomes and unstable livelihoods. Around 52 percent of India's total land under agriculture is still unirrigatedfasing problems for farmers investing in product

**Table 1: Comparison of crop insurance schemes in India**

| Feature | NAIS (1999) | MNAIS (2010) | PMFBY (2016) |
|---|---|---|---|
| Premium rate | Low | High (9–15%) | Low (Govt. to contribute five times that of farmer) |
| One season-one premium | Yes | No | Yes |
| Insurance amount covered | Full | Capped | Full |
| On account payment | No | Yes | Yes |
| Localised risk coverage | No | Hailstorm, landslide | Hailstorm, landslide, inundation |
| Post-harvest losses coverage | No | Coastal areas | All India |
| Prevented sowing coverage | No | Yes | Yes |
| Use of technology | No | Intended | Mandatory |
| Awareness | No | No | Yes (target to double coverage to 50%) |
| Insurance companies | Only government | Govt and private companies | Govt and private companies |

**Source**: Ministry of Agriculture and Farmers Welfare, January 2016.The models prior to PMFBY were claim-based insurance schemes. The NAIS was backed by a government-funded insurance company called "Agriculture Insurance Company," which collected premiums from farmers without any subsidy and then used that money to pay the claims at the end of the season. On the other hand, the PMFBY allows a subsidy in the premium-based system, which is implemented through a multiagency framework of select private insurance companies, the ministries of agriculture, GoI and state governments in coordination with commercial banks, cooperatives, regional rural banks and regulatory bodies, e.g. the Panchayati Raj. Thus, the premium is subsidised by the centre and state governments to reduce the burden on farmers.

The PMFBY was created to target 50 percent of all farmers, with the promise of compensation in case of crop loss. The previous schemes saw low enrolment rates due to a lack of trust. Moreover, under those schemes, the dissemination of agricultural insurance was low and stagnant in terms of the area insured and the farmers covered in the previous schemes due to high premiums, the lack of land records, low awareness and the absence of coverage for localised crop damage.

Since its implementation, the PMFBY has achieved 41-percent coverage of farmers—this may be considered impressive, particularly when compared to the 28-percent coverage of farmers achieved under the three previous schemes combined (WBCIS + NAIS + MNAIS). During its first year, 58 million farmers were enrolled in the PMFBY, a quantum jump from the 30 million insured in the previous year under the MNAIS. However, there has been a fall in the number of total farmer applicants from 58 million in 2016–17 to 47 million.

**Table 2: Percentage change in indicators for Kharif season under PMFBY**

| | Kharif 2016 | Kharif 2017 | Percentage Change |
|---|---|---|---|
| Farmers insured | 40,258,737 | 34,776,055 | –0.14 |
| Claims paid (crore) | 10,496.3 | 17,209.9 | 0.64 |
| Gross premium (crore) | 16,317.8 | 19,767.6 | 0.21 |
| Area insured (ha) | 37,682,608 | 34,053,449 | –0.10 |

**An assessment performance of (PMFBY)**

While the PMFBY aims to be a transformative scheme, its implementation has been poor, with various issues in its execution at the state/district level.

**Structural Issues**

Since states choose to voluntarily implement the PMFBY, it is their responsibility to notify crops. However, it is unclear how states should choose the major crops during a season for different districts, which results in the exclusion from insurance coverage of farmers who grow non-notified crops. Further, state governments use their discretionary powers to decide how much land will be insured and the sum insured, to reduce their burden of subsidy premiums. Thus, farmers often find it pointless to buy the insurance if the sum

insured is less than their cost of cultivation. During Kharif 2016, Rajasthan decided to minimise the landholding insured to save themselves INR 60 lakh.

**Table 3 : State-wise number of farmers insured under PMFBY**

State-wise Tentative Number of Farmers Insured under Pradhan Mantri Fasal Bima Yojana (PMFBY) in India (2016-2017 and 2017-2018)

| States/UTs | No. of Farmers Insured | | | | | |
|---|---|---|---|---|---|---|
| | 2016-2017 | | | 2017-2018 | | |
| | Loanee | Non Laonee | Total | Loanee | Non Laonee | Total |
| Andaman and Nicobar Islands | 324 | 0 | 324 | - | 0 | - |
| Andhra Pradesh | 1637887 | 133670 | 1771557 | 1637078 | 61594 | 1698672 |
| Assam | 60229 | 36 | 60265 | 26528 | 65 | 26593 |
| Bihar | 2672627 | 40551 | 2713178 | 2239812 | 37408 | 2277220 |
| Chhattisgarh | 1352433 | 196731 | 1549164 | 1279785 | 218224 | 1498009 |
| Goa | 757 | 0 | 757 | 542 | 0 | 542 |
| Gujarat | 1970507 | 4685 | 1975192 | 2547 | 1231067 | 1233614 |
| Haryana | 1332922 | 3062 | 1335984 | 1348632 | 2987 | 1351619 |
| Himachal Pradesh | 318642 | 60411 | 379053 | 188931 | 1647 | 190578 |
| Jammu and Kashmir | 0 | 0 | 0 | 64553 | 328 | 64881 |
| Jharkhand | 200681 | 677073 | 877754 | 158279 | 847592 | 1005871 |
| Karnataka | 1589762 | 1526672 | 3116434 | 653942 | 791593 | 1445535 |
| Kerala | 53211 | 24194 | 77405 | 38471 | 3471 | 41942 |
| Madhya Pradesh | 6483990 | 509137 | 6993127 | 6618096 | 280540 | 6898636 |
| Maharashtra | 4089619 | 7916713 | 12006332 | 2113915 | 7698713 | 9812628 |
| Manipur | 5928 | 2438 | 8366 | - | 0 | - |
| Meghalaya | 89 | 0 | 89 | 146 | 0 | 146 |
| Mizoram | 0 | 0 | 0 | - | 0 | - |
| Odisha | 1787620 | 32616 | 1820236 | 1745785 | 159835 | 1905620 |
| Puducherry | 44 | 8493 | 8537 | - | 0 | - |
| Rajasthan | 9242326 | 45610 | 9287936 | 8017230 | 359 | 8017589 |
| Sikkim | 0 | 574 | 574 | 312 | 518 | 830 |
| Tamil Nadu | 326698 | 1123438 | 1450136 | 385941 | 994725 | 1380666 |
| Telangana | 903544 | 72278 | 975822 | 980851 | 33559 | 1014410 |
| Tripura | 3179 | 9349 | 12528 | 5042 | 5217 | 10259 |
| Uttar Pradesh | 6648660 | 21594 | 6670254 | 5356183 | 68875 | 5425058 |
| Uttarakhand | 228915 | 32656 | 261571 | 50934 | 15532 | 66466 |
| West Bengal | 2789072 | 1346117 | 4135189 | 1997916 | 546732 | 2544648 |
| **India** | **43699666** | **13788098** | **57487764** | **34911451** | **13000581** | **47912032** |

Source : Lok Sabha Unstarred Question No. 2915, dated on 13.03.2018.

## Financial Issues

1. Many state governments have failed to pay the subsidy premiums on time, as paying these premiums eat into their budgets for the sector. This leads to insurance companies delaying or not making claim payments. In 2016, the Bihar government had to pay INR 600 crore as premium subsidy, which was one-fourth its agricultural budget of INR 2,718 crore in 2016.Since this would reduce the state government's available fund, it chose instead to dole out direct transfers and loan waivers as cheaper alternatives to win vote banks.
2. In 2016–17, private insurance companies paid a compensation of INR 17,902.47 crore, and the difference between the premiums received and compensation paid was INR 6,459.64 crore.[1] In 2017–18, they paid over INR 2,000 crore less in compensation. Thus, the outgo in compensation during 2017–18 stood at just INR 15,710.25 crore. Evidently, insurance companies are piggy-backing on the banking system, as the difference increases despite a fall in the number of farmers insured. Insurance companies continue to profit, despite a decline in the number of farmers being benefitted. Moreover, approximately 80–85 percent of the premium is paid by the government, which puts a huge burden on the exchequer, leading to delays in paying premiums and, in turn, delays in the claims-benefit process. Simply increasing the funds allocated to the scheme will not help the government achieve higher enrolments and lower premiums. What is needed is a robust system of trust and investment to provide credit and insurance. Table 4 shows that the difference between gross premium and compensation paid in the Kharif season has reduced, indicating a discrepancy in the data on the disbursement of claims and the profits made by private insurance

## Making agriculture insurance to indian farmers

- In recent months, several places in north India experienced unseasonal dust and thunderstorms, followed by unseasonal rains. This has cost lives and led to extensive crop damage. With freak weather events becoming more common, protection of farmers against these risks figures prominently in the NarendraModi government's agricultural policy.
- From the Comprehensive Crop Insurance Scheme (1985) through the National Agriculture Insurance Scheme (1999-2000), Modified National Agriculture Scheme (2010) and on to the PradhanMantriFasalBimaYojana (PMFBY) (2016), India's agricultural insurance schemes have undergone several changes in their approaches. Mitigating risk in the agricultural sector has a direct implication for agricultural productivity and farmer welfare. It also intersects with some of the key sustainable development goals (SDGs), such as ending poverty, achieving food security and curbing hunger.
- In spite of the government's good intentions, assessments of the PMFBY face several challenges that make processing and verification of insurance claims error-prone and time-consuming. Payouts do not reach farmers at the right time and in amounts commensurate with their losses. Many experts and organizations working in this area are now recommending the use of information and communication (ICT) tools to help farmers regain faith in crop insurance schemes and make them more efficient and transparent.
- The International Initiative for Impact Evaluation (3ie) has funded a number of studies that explore the feasibility

of using ICTs in the field of agricultural risk mitigation. A 3ie-funded study conducted by researchers at the International Food Policy Research Institute demonstrates how to capitalize on the availability of low-cost internet and the rising use of smartphones. This study looks at the effectiveness of a smartphone-based app amongst 750 smallholder wheat producers across Haryana and Punjab—the second and third highest wheat-producing states in India, respectively.

**Weather based crop insurance:**

- Crops covered
- Farmers covered
- Perils covered
- Risk premium
- Premium rates
- Insurance companies participating in WBC

Crops covered

- Major Food crops (Cereals, Millets & Pulses) & Oilseeds
- Commercial / Horticultural crops

Farmers covered

All farmers including sharecroppers and tenant farmers growing the notified crops in the notified areas are eligible for coverage. However, farmers should have insurable interest on the insured crop. The non-loanee farmers are required to submit necessary documentary evidence of land records and / or applicable contract / agreements details (in case of sharecroppers / tenant farmers).

All farmers availing Seasonal Agricultural Operations (SAO) loans from Financial Institutions (i.e. loanee farmers) for the crop(s) notified are covered on compulsory basis.

The Scheme is optional for the non-loanee farmers. They can choose between WBCIS and PMFBY, and also the insurance company.

Perils covered

Following major weather perils, which are deemed to cause "Adverse Weather Incidence", leading to crop loss, shall be covered under the scheme.

- Rainfall – Deficit Rainfall, Excess rainfall, Unseasonal Rainfall, Rainy days, Dry-spell, Dry days
- Relative Humidity
- Temperature – High temperature (heat), Low temperature
- Wind Speed
- A combination of the above
- Hailstorms, cloud-burst may also be covered as Add-on/Index-Plus products for those farmers who have already taken normal coverage under WBCIS.

The perils listed above are only indicative and not exhaustive, any addition deletion may be considered by insurance companies based on availability of relevant data.
Risk period (insurance period)

Risk period would ideally be from sowing period to maturity of the crop. Risk period depending on the duration of the crop and weather parameters chosen, could vary with individual crop and reference unit area and would be notified by SLCCCI before the commencement of risk period.

Premium rates

| S. No | CROPS | Maximum Insurance charges payable by farmer (% of Sum Insured) |
|---|---|---|
| i) | Season - Kharif - Food & Oilseeds crops (all cereals, millets, & oilseeds, pulses) | 2.0% of SI or Actuarial rate, whichever is less |
| ii) | Season - Rabi - Food & Oilseeds crops (all cereals, millets, & oilseeds, pulses) | 1.5% of SI or Actuarial rate, whichever is less |
| iii) | Season - Rabi and Kharif - Annual Commercial / Annual Horticultural crops | 5% of SI or Actuarial rate, whichever is less |

## III. CONCLUSION

An effective crop insurance system is crucial in cushioning income losses for farmers, financing inputs for agricultural production, and increasing access to agricultural credit to boost agricultural productivity. The existing model, however, has failed to reduce the burden of debt-repayment in the event of crop loss, neither helping to meet the consumption needs nor augmenting income. The government must tackle these fundamental flaws and iron out the policy wrinkles in a scheme that was meant to mobilise financial resources for the agriculturally distressed.

First, in certain states, land lease laws must be changed to achieve larger participation in the welfare programme. The land policy must be dynamic to prevent transformations from stalling, an important concern that needs cooperative federalism to achieve higher productivity in this sector.

Second, many male farmers are moving to urban areas for better opportunities, leaving the women to take care of the farms. Unfortunately, these women are not recognised as cultivators and cannot avail the benefits of the schemes targeted to farmers. It is crucial to include women farmers, tenant farmers and sharecroppers to help formalise this economy, protecting revenue and jobs. Inclusivity in the agricultural sector is key to achieving the Sustainable Development Goals.

Third, it is necessary to resolve the problems affecting the banking system. Bank credit to agriculture has decelerated during 2017–18, partly reflecting the pervasive risk-averse nature of and debt waivers by various state governments, which may be the primary cause for disincentive is in glending.While the RBI has issued a directive to banks to invest a fixed part of their loans in agriculture, small and marginal farmers are unable to avail this credit as short-term loans, thus turning towards informal sources and, in turn, becoming indebted. A better communication strategy is required to educate farmers about the risks of informal loans. Banks must use the combined advantages of better technology, such as the Aadhaar and financial inclusion strategies, to ensure that farmers can access the credit available to them and receive their claims on time. Only with newer forms of credit assessment and risk management, along with faster modernisation of rural banks, will the agricultural sector be able to counter the digital divide with urban financial markets.

Finally, insurance companies and regulators need to take a hard look at the efficacy of the PMFBY scheme. Claims are not being honoured and insurance companies are making high profits without the benefits trickling down to the farmers. Left unchecked, this will erode the credibility of the financial sector. Without a credible financial sector, the solvency positions of rural banks will be at stake. This, in turn, will impact rural-lending and can lead to a further decline in agricultural productivity.

If modern insurance must reach the last farmer, the current issues have to be addressed to ensure that the subsequent scheme improves upon the PMFBY. The substantial income allocated to this scheme calls for better enforcement and transparency. By riding on an insurance model backed by private and public partnership along with technological advancements, the PMFBY scheme can include and protect the vulnerable farming population, by not only acting as an insurance scheme but also leading to the financialisation and formalisation of the economy.

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