



## Insurance Crop Schemes in India: A Review

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### Abstract

In Indian context, it is true that India has achieved self-reliance in production of food grains. With the use of modern techniques and tools of production, things are getting better as compared to how these were earlier but it is still heart-broken to see farmers suffer. Despite various advancements in this area, there is not much improvement in their income due to various reasons like natural catastrophes, price fluctuations, lack of awareness etc. Variability in weather is the main reason for the unstable situation of resource-less farmers as they are more vulnerable to it. Farmers' committing suicide is a big threat faced by the Government of India these days. So, it is imperative to protect these farmers from any kind of natural calamities and to ensure their credit eligibility. This can be done through the implementation of effective crop insurance mechanisms. Till date, The government of India has introduced many agricultural schemes throughout the country. This paper basically focuses on the evolution of Indian crop insurance and various types of insurance and policies launched by the government over a period of time. There are various kinds of crop insurance to increase credit worthiness and satisfaction towards the farming. It is the only robust risk mitigation tool for the farmers, although crop insurance has been in India since 1972, yet it has to face various problems like lack of transparency, high premium delay in conducting crop cutting experiments, nonpayment of claims to farmers. Realizing the importance and limitations in existing crop insurance, a new crop insurance was launched on Baisakhi, Pradhan Mantri Fasal Bima Yojna (PMFBY) from kharif (2016). The center has claimed that the coverage of this scheme has increased to 30% of the Gross Cropped Area (CGA) from 23% in 2015-16\*. Despite this the adoption rate of these policies are very low- 4.8% Kharif season and 3.17% in Rabi season. The scheme has faced various challenges in the first year of its implementation. Lack of accurate data is another reason for it. The litmus test of any crop insurance program is quick assessment of crop damage and payment of claims into farmers account directly, but it remained less popular in its first year because of its improper implementation. The best solution for this problem is linking of portal with core banking practices. Although, the growth of agriculture in India is varied across state to state which creates a concern for long term food security and welfare of farmers too.

\* <https://www.thehindubusinessline.com>

**Keywords:** *agricultural risk, crop insurance, premium subsidy, farmers suicides India*

### Introduction

India is basically an agrarian economy. Most of the Indian population is engaged in agricultural activity. In 2008, it was 53.1% had declined to 43.9% in 2018. Studies say that approx. 58% of rural population depends on agriculture as their major source of livelihood. Agriculture does not include only farming but much more than that like fisheries and forestry, floriculture, poultry etc. It also has major contribution towards the GDP of the country. Agriculture and allied sectors share 15.87% of the countries GDP in 2018-19\*. Now a days it has become more diverse and dynamic due to increasing aspects of socio-institutions, techno-economic factors etc. As per the reports by the central statistical office, the contribution of agriculture and allied sectors (including livestock, forestry and fisheries) was 17-18% to countries GDP by employing about 41.49% of Indian workforce in 2020. Despite of such a huge contribution, the condition of India's agriculture is not so satisfactory. A report by World Bank also states that there is declining trend in employment in



agriculture in India\*\*. It is highly vulnerable to risks like droughts and floods. Farmers have developed their own risk management strategies to cope up with these adverse events, sometimes with the help of the government. Although, Government of India is also making each and every effort to protect farmers and develop farming. They make policies and plans to evolve their credit eligibility. For this the major contribution is introduction of various types of crop insurance. These are the insurance based on various aspects like weather, credit worthiness etc. agriculture production and farm insurance in India are frequently affected by natural disaster such as drought, floods, cyclone, storm, landslide, earthquake etc. with the growing commercialization of agriculture, the magnitude of loss due to unfavorable eventualities is increasing. In recent times, mechanisms like contract farming and futures trading have been established which are expected to provide some insurance against price fluctuations directly or indirectly. But, agriculture insurance is considered an important mechanism to effectively address the risks to output and income resulting from various natural and manmade events.

\*. World Bank. World Development Indicators:structure of output, (2020a) available at: <http://wdi.worldbank.org/table/4.2>

\*\*World Bank. Employment in Agriculture(% of total Employment)(modelled ILO estimate)-India,(2020b) Available at: <http://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=IN>

### Review of literature

Insurance is a contract between two parties, one is insured and another is Insurer. In this Insurer agrees to pay the loss suffered by the insured due to any un-controllable event. Contributions paid by various policyholders are used to mitigate the loss of one. This also enables the farmers to grow highly risky crop without the fear of complete loss as they are assured of being compensated in case of crop failure (Hazell1992). Bhende (2005) also found that farmers income from semi-arid tropics are generally rain fed which highly impact their crops. So such Crop Insurance help them to get into these risky ventures with less worries. Sinha Sidharth(2004) says that Crop Insurance is an effective instrument to protect farmers from agriculture variability. He also states that with the use of technologies, we can also improve the accuracy and timeliness of crop estimation methods. According to the National Agriculture Policy (2000), "Despite technological and economic advancements, the condition of farmers continues to be unstable due to natural calamities and price fluctuations."

\*Source: Research paper on Impact of Crop Insurance on Indian Agriculture. (Mr. Mukesh . H. V)(Volume -4,Issue-4, April-2015-ISSN No 2277-B160)

### What is crop insurance?

Crop insurance is the part of general insurance. Like all others insurance policies, this is also based on the pooling based system. In this the company collects the premium from all the policyholders and use this to compensate the farmers bearing losses. There can be two forms of managing the risk, one is distribution across space and another is distribution across time. In the former technique the loss of one area is borne by the farmers of another area but in later technique compensation is paid through the reserves of the company or through the premium collected. On an average the federal government subsidizes 62% of the premium. In India a multiperil crop insurance called National Agricultural Insurance Scheme (NAIS) was implemented. This schemes is being implemented by agricultural insurance company of India, an Indian government owned company.



## Evolution of crop insurance scheme in India

In order to protect the farmers from the adversity of weather and to make them secure. The first initiative which was taken by the government of India is introduction of nation wide crop insurance scheme and comprehensive crop insurance introduced in kharif 1985. Area approach was followed for this scheme and to assess indemnity also. This was replaced by national agriculture insurance scheme (NAIS) in rabi 1999-2000 which was further changed to modified national agriculture insurance scheme (MNAIS) during Rabi 2010-2011. Apart these projects such as seed crop insurance (1999-00) farm income insurance scheme and weather based crop insurance were implemented from time to time. In this field Pradhan Mantri Fasal Bima Yojna has important place. It is the comprehensive insurance cover against the failure of crop which also help them in stabilizing their income and also encourages them in adopting new innovative techniques

### Various crop insurance schemes:

#### 1. First individual approach scheme 1972-1978:

In different forms of experiment on agriculture insurance on a limited and scattered scale started from 1972 to 73. When the General Insurance Corporation of India introduced a Crop Insurance Scheme on H-4 cotton and later included groundnut, potato and wheat. The States in which this scheme was introduced was Andhra Pradesh, Karnataka, Gujarat, Maharashtra, Tamil Nadu and West Bengal. This scheme covered around the 3110 farmers for a premium of Rs4.54 lakh against claim of rupees 37.8 8 lakh

#### 2. Pilot Crop Insurance Scheme (PCIS) 1979 to 1984

The main supporter of this scheme was professor V.M. Dandekar (father of crop insurance) This scheme was launched by the General Insurance Corporation in 1979 which was based on area approach for providing insurance cover against a deficit in crop yield below the threshold level. Crops covered under this scheme were cereals, millets, oil seeds, cotton, potato and chickpea. It was implemented in 13 states till 1984-85 and covered 6.27 lakh farmers for a premium of Rs 19 7.0 1 lakh against claim of rupees 157 lakh during entire period.

#### 3. Comprehensive Crop Insurance Scheme(CCIS) 1985 to 1989

It was launched in 1985 and was the first nationwide scheme. before this, the earlier scheme was just a pilot project on small and scattered manner. This scheme was linked to short-term credit and was based on homogeneous area approach. It was introduced in 1985 286 the main difference between PCS and CCIS was that pcis was on voluntary basis while ccis was compulsory for Loanee farmers CCIS covered 763 lakh farmers for a premium of rupees 404 against claim of rupees 2303 crore.

#### 4. National Agriculture Insurance Scheme(NAIS):

It was launched with the aim to increase coverage of farmer's crops and risk commitment was introduced in the country from Rabi 1999 to 2000 replacing CCIS comprehensive Crop Insurance Scheme. The main aim of this scheme was to protect the farmers from the crop loss suffered due to natural calamities such as drought, flood, hailstorm, cyclone, pest and diseases. it was basically launched by agriculture insurance company of India Limited it was continued till kharif 2013 have some States allowed to implement during 2013 -2014 also it was available to both loanee and anon loanee irrespective of size of holding it was not mandatory for union territories and it has been implemented by the 25 states and two union territories since the beginning of the scheme 2084. 78 lakh farmers for a premium of rupees 867 121 black against the claim of Rs 25 37 458 were covered until 2012 and 2013.



## 5. Modified National agricultural Insurance Scheme

In order to provide better and more effective protection to farmers a proposal of modified National agricultural Insurance Scheme was prepared and was approved by the government of India for implementation on pilot basis in 50 districts from Rabi 2010 to 11 season during the 5 season of its implementation in 17 States the MNAIS covered for 5.80 lakh farmers for a premium of Rs 108800 lakh against the claim of rupees 86400 lakh until Rabi 2012 and 13 the total area insured was 46.79 lakh hectares during the same period.

## 6. Pilot weather based crop Insurance Scheme

With the objective to bring more farmers under the fold of crop insurance, a pilot weather based crop insurance scheme was launched in 20 states in 2007. It was also implemented by some private companies. The WBCIS is intended to provide insurance protection to farmers against adverse weather incidences such as deficit and excess rainfall, high or low temperature, humidity etc. which were deemed to impact adversely the crop production. It has the advantage to settle the insurance claim in shortest possible time. The WBCIS is based on actuarial rates of premium to make this scheme attractive premium actually charged from farmers has been restricted at par with NAIS. It was implemented in 18 states and 469.38 lakh farmers were covered for a premium of rupees 751920 lakh against the claim of rupees 52860 lakh under the scheme 2007-2008 to 2012-2013. The total area insured was 632.01 lakh hectares during the same period.

## 7. Pilot coconut palm insurance scheme (CPIS)

The coconut palm insurance scheme was approved for implementation on pilot basis for the year 2009-10 and 2010-11 in the selected areas of Andhra Pradesh, Goa, Karnataka, Kerala, Maharashtra, Orissa and Tamil Nadu. It was extended to West Bengal also. In this scheme 50% of the premium is contributed by government of India, 25% by the concerned state and 25% by the farmers. This scheme was administered by the coconut development board. Number of farmers covered = 51108 against the premium of rupees 167.69 lakh against the claim paid of rupees 214.05 till December 2013.

- <https://www.aicofindia.com/AICEng/Pages/Global%20Navigation/Evolution.aspx>

## Issues in the implementation of the scheme

### Low Penetration of agriculture insurance.

The penetration of agriculture insurance in India was low and stagnant in terms of the area insured and the number of farmers covered till 2014-15. The average area insured under all the schemes combined was 16.3 million hectares in the Rabi and 29.7 million hectares in the Kharif. The number of farmers insured was 13 million in the Rabi and 25 million in the Kharif for all the schemes.

### Area discrepancy

The issue of area discrepancy has been prevalent since early years of crop insurance as in many cases area insured was greater as compared to net sown area as reported by government agencies. According to P.K. Mishra committee report this problem was acute particularly in some districts of Gujarat growing groundnut as major crop. The problem of area discrepancy continued even after the introduction of NAIS in Gujarat in Kharif 2000.

### Delay in assessment and settlement of claim

Another major problem in this scheme was delay in settlement of claim. The assessment of these settlements were done according to the traditional methods that took around 6-12 months which sometimes crosses the next crop season.



### Premium paid and sum insured related issues

The sum insured was worked by multiplying the notional threshold yield with MSP farm gate price. Although the premium of various scheme were calculated on the basis of actuarial basis. But the actuarial premium rates under MNAIS were high for most of the insured crops in many district, sum insured in certain cases was insufficient to even cover the cost of cultivation.

### Implementation of PMFBY

After realizing the limitations of existing system of crop insurance the government of India launched Pradhan Mantri Fasal Bima Yojna under the Ministry of Agriculture & farmers welfare, New Delhi. This scheme was announced by NDA government for new crop insurance. It became operational for kharif, 2016. It is the new crop insurance scheme based on the One Nation One scheme strategy. This is the upgraded version of the earlier schemes. This scheme came into existence after replacing "National Agriculture Insurance Scheme" The main purpose of this scheme was

- \* To provide adequate insurance coverage to all the farmers to mitigate or minimizing their loss in case of any catastrophic disaster.
  - \*To provide financial support to farmers in case of crop loss and providing financial support for next season.
  - \*Stabilizing the income of farmers to ensure their continuance in farming.
  - \*Encouraging farmers to adopt innovative and modern agricultural practices so as to increase their productivity.
  - \*Ensuring flow of credit towards farmers which will contribute to food security, crop diversification etc.
- \*\*<https://vikaspedia.in/agriculture/agri-insurance/pradhan-mantri-fasal-bima-yojana>

There are two schemes covered under this PMFBY. It has replaced the National Agriculture Insurance scheme and Modified National Agriculture Insurance scheme. These two schemes are

1. Pradhan Mantri fasal Bima Yojna
2. Revised Weather Based Crop Insurance Scheme

These are implemented by empaneling general insurance companies and these companies are selected by implementing agency through bidding by the concerned state government. Till now the government has also revamped the scheme and called PMFBY 2.0. It is completely voluntary for all farmers from 2020 kharif

### Highlights of the scheme

Under this policy the government has decided 2% premium rate for Kharif crop and 1.5% for Rabi crops which is comparatively low and in case of crop failure the government will pay the full insured amount. For commercial crops and horticulture the premium rate is 5%.

This scheme has also removed the provision of capping the premium rates, now the farmers can get the full assured amount without any deduction in the value.

This scheme has also encouraged the widespread use of technology and modern gadgets like mobile phones, remote sensing techniques to have access over latest updates and actual crop position.

It is estimated that the new scheme will ensure about 75-80\* per cent of subsidy for the farmers in insurance premium.

\*<https://vikaspedia.in/agriculture/agri-insurance/pradhan-mantri-fasal-bima-yojana>



### Coverage of the scheme

All those farmers who grow notified crops in a notified area and have insurable interest in the crop are eligible to get insured under this scheme and the farmers can easily get themselves registered under this scheme through website <https://pmfby.gov.in>

Now the government has made the scheme voluntary from the Kharif 2020 season in order to address the needs of the farmers. Before this, it was compulsory for some categories.

**Voluntary coverage:** This coverage may be obtained by all farmers including Crop KCC/Crop Loan Account holders whose credit limit is not renewed.

### Risks to be covered

This scheme covers losses due to non-controllable risks, such as Natural Fire and Lightning, Hailstorm, Cyclone, Typhoon, pest attacks, Hurricane, Tornado etc. to the crops. Risks due to Flood, Landslide, Drought, Dry spells, Pests Diseases are also covered.

Farmers who are unable to sow or plant crop due to adverse weather condition in the notified area than they can be eligible to get indemnified up to 25% of sum assured.

This scheme also covers the post-harvest losses for the crops which are "cut and spread" condition for open dry in the field up to the maximum period of 14 days

### Features of PMFBY

**Use of technology:** This new schemes include the implementation of various new and innovative technologies like satellite imagery, vegetation indices etc. along with mandatory usage of smart phones. This basically contributes towards increasing yield estimation in order to minimise area discrepancy.

**Increased farmers awareness:** Another feature of PMFBY is that it focus on increasing the enrollment of the farmers so that its maximum benefit can be taken.

**Better coverage:** aims at covering the losses suffered by farmers due to reduction in crop yield as estimated by local appropriate government authorities. It also cover pre sowing losses, post harvest losses due to natural calamities etc.

**Low farmer premium rates:** premium is the contribution made by the farmers against the policy. it is kept low in this scheme and vary accordingly  
kharif -2% of sum assured or actuarial rates whichever is less.

rabi -1.5% of sum assured or actuarial rates whichever is less.

Kharif and rabi -5% of sum assured or actuarial rates whichever is less.

### Challenges in implementing PMFBY

**Assessment and payment of claims:** it is the responsibility of the state government for providing yield data CCE's to insurance companies so that claims can be settled within three weeks from the date of receipt of data. The main challenge here is late receipt of data and subsidies by the government. This is true in the case of Tamilnadu and Gujarat in kharif 2016 and Rajasthan and Tamilnadu in Rabi in 2016-17 that have partial submitted data to the insurance companies.

**Insufficient and inefficient CCE's:** the total number of CCE's planned by government of India for both seasons in 2016-17 was just 9.27 lakh along with the use mobile based technology with GPS stamping. This has been mandated to improve the quality of data to make faster claim settlement. But, neither the number of CCE's has increased nor the technology has fully implemented and adopted.

**Inadequate insurance coverage:** although the some insured has increased in 2016 comparatively but price risk still not covered and farmers remain exposed to volatility in prices of agricultural



commodities. Some insured was to be equal to the SOF for that crop. As fixed by district level technical committee.

**Identification issues:** This scheme does not distinguish between large and small farmers and thus raises the issue of genuine farmers. Due to this the small farmers are vulnerable class.

### **Expectations from these schemes:**

- ❖ These must help the farmers in eliminating the risk of farmers due to the event of crop failure.
- ❖ Credit flow to farmers must be maintained and regulated.
- ❖ Along with the farmers, this must also enables the community to work properly by maintaining production and employment, demand-supply pattern etc.
- ❖ Procedure should also be simple so as to encourage more and more farmers to take the policy and must have proper statistical base.

### **Recommendations and Improvement:**

1. It is recommended to create a centralized web portal to maintain land records available to everyone for making schemes.
2. Premium rate should be revised so that the marginal farmers can afford to pay premium.
3. Proper check should be made for weather conditions so that farmers interest can be protected properly.
4. An agriculture insurance act must be formulated to take care the need of crop insurance.
5. It is also recommended for the state government to ensure the use of GPRS enabled camera while the crop is cutting
6. **Beed Model:** It is also suggested that government can consider implementing the "Beed Model" of crop insurance scheme. Under this plan, The insurers potential losses are reduced.

### **Conclusion**

Crop insurance is a very unique and significant risk management tool which encouraged the farmers to expand their crop production even for high risk crop. Critical analysis reveals that the crop insurance is a real solution for the risk encountered by the farmers. Designing, evaluating and regulating indexed insurance products is really an expertise area which demands lots of technical support .It is also kind of risk transfer device which ensure them to get indemnified in case of risk failure. The two major risk on which the farmers has no control are price fluctuations and monsoon variability. Besides this others are attack of pests and diseases, floods, situation of no rain in certain areas etc. The report of Ministry of Agriculture and Farmers Welfare revealed that in a study conducted with 5993 farmers, only 37% of them knew about these schemes which show huge gap in the awareness among the farmers. This shows that how much the authorities are ineffective in spreading these schemes nationwide. Even those know about it consider it as Investment rather than risk mitigation tool. Private companies being the major player is also more focused on reaping the profits. Due to lack of competition and Monopoly these companies are least adhere to offer new schemes as per the suitability of the farmers. Also an effective tool should be introduced for speedy and accurate claim settlement. The use of latest technologies such as 3D imaging, Simulation Modelling, Remote- sensing, ICT should be there for assessing actual crop loss. Also the farmers who use these tools and schemes must be given incentives by providing policies at reasonable rates and premiums. The central and state government needs to join their hands in formulating and implementing more relevant schemes to the farmers, the real back bone of our country.



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