

# Performance Of Agricultural Insurance In India

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## ABSTRACT

India's economy relies heavily on agriculture. Agriculture remains the lifeblood of India's economy notwithstanding the country's progress in other areas. All of these things contribute to yield discrepancies as well. Disease, insect, and natural or anthropogenic disasters like as flooding, drought, and fire can reduce production. Area and yield may be impacted in the same manner, differently, or in the opposite way depending on the event. Since crop insurance is the only means of safeguarding agricultural productivity, it is crucial to have on hand in case of unanticipated perils. As a result of the shortcomings of the previous crop insurance system, the Pradhan Mantri Fasal Bima Yojana (PMFBY) was introduced on Baisakhi day for the 2016 Kharif season. While the total insured area has grown by 6.5% (from 53.7m ha in 2015-16 to 57.2m ha in 2016-17), this is still a very small rise.

**KEYWORDS** Agriculture, Crop Insurance, National Agricultural Insurance Scheme, Farmers' Awareness.

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## INTRODUCTION

In India, there are 116 million farmsteads spread over 163 million acres. Eighty percent of the agricultural workforce consists of small and marginal farmers, defined as those with holdings of 2 hectares or less. Farmers encounter a wide variety of dangers due to the nature of farming as a profession. About 65% of Indian farmers rely on rain-fed irrigation, while 60% of the country's net sown area is dependent on rain. The amount of rain and how it falls during the Monsoon Season, which may be unpredictable at times, is crucial to the development of crops and the actualization of production. The irrigated crops are also impacted by the rain pattern. Almost two-thirds of India's cultivated land is at risk of drought. This creates a hazard for farmers while growing various crops. These disasters damage an annual average of 12 million hectares of cropland, which has a significant effect on yields and overall agricultural output.

Droughts, floods, cyclones, storms, landslides, and earthquakes are only few of the natural calamities that have a negative impact on agricultural productivity and farm incomes in India. Natural disasters and those caused by humans, such as epidemics, fires, the distribution of phony seeds, fertilizers, and pesticides, price crashes, etc. make agriculture even more vulnerable to these events. All of these occurrences, which are beyond of farmers' control, have a significant negative impact on farmers due to lost productivity and farm revenue. The scale of damage due to calamities is expanding in tandem with agriculture's increasing commercialisation. Modern innovations like futures trading and contract farming are assumed to cushion consumers from price swings. However, insurance for the agricultural sector is seen

as a vital method for mitigating the risks to production and revenue from both natural and man-made disasters. Although the concept of crop insurance has been around for over a century in India, it has only just begun to take shape in the form of practical programs. It wasn't until after independence in 1947 that crop insurance was given any real thought.

## LITERATURE REVIEW

**Saheli Bhattacharya et.al (2018)** Although crop insurance cannot address all of the issues that farmers confront, it can help mitigate some of them. Crop insurance is a complex topic, but this article breaks it down for the reader and compares the many crop insurance programs that have been implemented in the United States throughout the years. Since many Indian farmers, despite the crop insurance program's long history in the country, remain unaware of its value.

**Ashok Gulati et.al (2018)** India's farmers face significant agricultural hazards as a result of the unpredictable weather. A strong insurance system is one of the most useful tools for reducing the impact of potential disasters in the agriculture sector. Pradhan Mantri Fasal Bima Yojana (PMFBY) was introduced on Baisakhi day as a replacement for the outdated and ineffective crop insurance system effective with the 2016 Kharif harvest. The overall insured area increased by 6.5%, while the number of farmers covered, the total amount insured, and the premium paid all increased by more than 20%, 74%, and 298%, respectively. There is also a lack of trust in the quality of such data due to the fact that these experiments are not being video recorded. Any crop insurance plan is only as good as its ability to quickly assess crop losses and pay claims into farmers' accounts, and PMFBY has not passed this test in its first year of operation. This article proposes leveraging cutting-edge technology and the JAM trinity to streamline the assessment and payment of claims by linking farmers' land records to their Aadhaar IDs and bank accounts. Connecting CBS to crop insurance through a gateway that can provide real-time data is essential. India's experience in the field of information technology should help with this.

**Mamata Swain et.al (2016)** As a result of the high degree of uncertainty in crop production caused by environmental factors such as weather and pest attacks, governments have implemented a number of crop insurance schemes to cushion farmers financially in the event of a failed harvest. The state of Odisha in India is home to not one but two significant crop insurance programs: the National Agricultural Insurance Program (NAIP) and the Weather-Based Crop Insurance Program (WBCIS). NAIP safeguards all commercial and food crops from catastrophic weather events by providing compensation for lost harvests. Losses in rice crop output due to rain are the sole kind of loss covered by WBCIS. Those receiving a loan from the government must participate in one or both of these programs, while all farmers have the option of participating in the other program voluntarily. Coverage, financial performance, and operational efficiency are just few of the metrics we examined and compared to determine the best crop insurance providers to protect farmers in the event of crop failure. Two hundred homes, utilizing WBCIS in the Bolangir district and NAIP in the neighboring Kalahandi district, make up the sample, which was gathered using a multi-stage sampling strategy. Between October 2011 and May 2012, we used direct interviews to obtain primary data by administering a standardized household questionnaire. As shown by the findings, the

proportion of Odisha state's total cultivated area covered by crop insurance grew from 10% to 16% between 2000 and 2012, yet it still leaves 84% of the state's farmland uninsured. The rising number of farmers receiving loans is largely responsible for this expansion of protections. Non-loanee farmers' coverage under NAIS and WBCIS crop insurance programs has decreased dramatically over time. NAIS, a sizable insurance scheme, covered 96% of the region insured by these two schemes in 2012, whereas WBCIS, a trial plan, covered just 4%. In comparison to NAIS, the research finds that WBCIS has a greater rate of acceptance, a larger proportion of farmers who profit, a cheaper premium, quicker claim processing, and more frequent indemnity payout. But WBCIS only compensates for paddy crop losses caused by either insufficient or excessive rainfall. Since there are several potential causes of crop failure in a state like Odisha, multi-peril crop insurance plans like NAIS are essential. This means that both initiatives need to be maintained, since they mutually enrich one another.

**Bindiya Kunal Soni et.al (2013)** All around the world, the agricultural industry has a bad rep for being fraught with peril. Farmers that are concerned about potential yield losses may want to look into crop insurance as a means of mitigating that risk. It's a boon to the agricultural economy since it helps keep farm revenue and output more stable. In this context, the term "premium" refers to the expense involved in transferring the risk of production to another entity. The ongoing National Agricultural Insurance Scheme is a positive development toward mitigating the risk faced by millions of farmers whose livelihoods are directly tied to the occurrence and distribution of monsoon rain in India. However, the data shows that few farmers really purchase crop insurance. The study's stated goal was to look at how crop insurance is doing in Gujarat right now in India. The research really asks people in the field how well informed they are about this product in the Anand area. The research closes with a number of recommendations aimed at raising farmers' understanding of crop insurance's benefits in order to facilitate greater use of the service across Anand district.

**Reshmy Nair (2011)** The research analyzes the effectiveness of the area yield and weather-based crop insurance systems already in place in the nation, as well as the nature and scope of crop insurance as a "specialty insurance." Although the multi-peril area yield programme has several known limitations and has not made significant progress in insurance coverage, the analysis reveals that it is in a rather advantageous position in terms of equity. Recently heralded as a potential financial innovation, weather-based crop insurance products are discussed in the paper along with the technological and infrastructural obstacles they face. While crop insurance is recognized as an important instrument for reducing exposure to risk, the report notes that not enough has been done at the policy level to address the systemic flaws that make it less effective. After conducting a thorough critical analysis of the problems plaguing both yield- and weather-based crop insurance programs, the research concludes that these deficiencies must be properly addressed if crop insurance is to become an effective risk reduction tool for farmers throughout the nation.

## **EVOLUTION OF CROP INSURANCE SCHEMES IN INDIA**

### **Pradhan Mantri Fasal Bima Yojana (PMFBY) - Kharif 2016 onwards**

The NDA administration launched a new crop insurance scheme after realizing the shortcomings of the current system, which failed to satisfy the demands of farmers. With the aim of helping farmers financially in case of crop loss via insurance and other means, the PMFBY system went into effect in Kharif, 2016.

### **Features of the new scheme**

**(i) Sum Insured-** The Scale of Finance (SoF) for a certain crop, as determined by the District Level Technical Committee, shall serve as the amount insured. In order to determine how much a certain farmer would be insured for, we multiply the financing scale per hectare by the proposed insured crop's acreage. Variations in soil quality, irrigation costs and facilities, fertilizer and seed prices, and labor costs are all included into the overall cost of agriculture, which varies from district to district.

**(ii) Premium Rates:** Farmers pay a premium of 2% of the Sum Insured during the Kharif season and a premium of 1.5% of the Sum Insured during the Rabi season. If a farmer wants to grow commercial or horticultural crops, he or she must pay a 5% extra. The subsidy for farmers' insurance premiums, split evenly between the federal government and state governments as a consequence of a disparity between the premium rate and the rate actually paid by farmers.

**(iii) Estimation of Crop Yield:** At the rural community level, four CCEs are required for major crops and eight are needed for secondary crops. Using inputs from RST/satellite pictures would allow for an optimal CCE sample size.

**(iv) Use of modern technology:** As far as estimating agricultural yields go, the CCEs have proved slow and unreliable. To expedite the claims-processing time and improve data quality, it was suggested to deploy GPS-stamped mobile technology. The acquisition price of smartphones and other portable gadgets will be divided evenly between the federal government and the states, with the federal government setting a maximum allowable expenditure. Manpower and infrastructure costs might be reduced by using existing technologies in the domains of remote sensing, aerial images, satellites, etc. The number of CCEs may be reduced by as much as 30 percent with the help of a variety of current technologies, according to estimates.

**(v) Role of Private players:** A number of insurance providers, both public and commercial, as well as the government-run Agriculture Insurance Company (AIC) of India, are taking part in the new program. The state government choose which Implementing Agency (IA) to hire by grouping districts into clusters of 15-20 that are either low-risk or high-risk, depending on the overall risk profile of the state. Competitive bidding up to three years is required to choose the IA.

**(vi) Time frame for loss assessment:** Within one month after the end of harvest is the deadline for yield data submission. The yield data will be used to process, approve, and pay out final claims, all of which must be accomplished within three weeks after yield data receipt.

**(vii) Timely release of premium subsidy to Insurance Companies:** At the start of each crop season, the government must pay half of the premium subsidy to insurance companies based on realistic estimates made by the businesses, with the other half due as soon as the insurance firm delivers the actual premium subsidy for the season.

**(viii) Publicity and awareness:** Fairs, exhibits, All of the cities in the alerted regions should be informed through short videos, electronic and print media, and documentaries. The crop insurance website has to have all new content supplied frequently.

#### **A STUDY ON GROWTH PERFORMANCE OF CROP INSURANCE SCHEMES IN ANDHRA PRADESH**

Average area covered, number of insured farmers, premium paid, total insured, and claim amount are shown in Table 3 for the period of 2000-2001 through 2013-2014 for the National Agricultural Insurance Scheme in Andhra Pradesh. Compound growth rates of 0.09 for the number of covered farmers, 10.40 for the total amount insured, 16.98 for the gross premium, and 0.25 for premium subsidies were all determined to be positive. Compound annual growth rates of -0.27, -17.85, and -29.64 were calculated, respectively, for the areas insured, claims paid with, and farmers aided metrics. However, the greatest increase was shown in the amount of money farmers lost due to the premiums they paid (Dey and Maitra, 2017).

**Table 1. Growth Performance of National Agricultural Insurance scheme (NAIS)**

S. No	Year	No. of Farmers insured	Area insured	Sum insured	Gross Premium	Premium Subsidy	Claims Paid	No. of farmers benefited
		No.in lakh	Ha.in lakh	Rs.in Crores	Rs.in Crores	Rs.in Crores	Rs.in Crores	No.in lakh
1	2000-01	19.6	27.07	2021.24	55.17	18.34	0.35	1.53
2	2001-02	17.76	23.62	2002.35	54.54	14.75	0.89	3.03
3	2002-03	18.30	26.68	2272.77	60.00	12.14	2.16	6.82
4	2003-04	17.37	26.21	2370.55	60.83	7.81	2.15	3.19

5	2004-05	25.93	40.91	3758.25	105.98	6.32	0.93	3.13
6	2005-06	22.48	38.01	3652.36	107.26	6.98	4.98	6.72
7	2006-07	22.70	36.49	4717.41	119.66	7.38	56.23	0.79
8	2007-08	233.34	38.65	4701.49	139.29	8.94	0.12	0.25
9	2008-09	21.53	36.40	4302.56	130.74	8.25	8.39	1.26
10	2009-10	33.48	49.82	7415.83	226.34	15.10	7.32	12.37
11	2010-11	26.62	39.04	6115.33	210.51	13.79	8.35	8.43
12	2011-12	22.47	32.39	6998.46	185.77	13.45	4.08	5.80
13	2012-13	15.64	25.04	6023.17	1367.40	12.40	0.71	1.14
14	2013-14	12.05	15.41	5194.29	144.55	11.09	0.00	0.00
	CAGR	0.09	-0.27	10.40	16.98	0.25	-17.85	-29.64

In Table 2 Learn about the average area covered, number of insured farmers, premium paid, total insured, and claim amount for the Weather Based Crop Insurance Scheme in Andhra Pradesh from 2009-10 to 2013-14. A record 9.32 million farmers and 15.17 million acres took part in the program in 2012-2013. In terms of both the quantity and quality of the agricultural clients it has served, WBCIS has been a success.

**Table 2. Coverage of Weather Based Crop Insurance Scheme (WBCIS)**

S.	No.of farmers	Area Insured	Sum insured	Gross Premium	Premium Subsidy	Claims Paid	No.of farmers
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No	Year	insured						beneitted
		No.in lakh	Ha.in lakh	Rs.In crore	Rs.In crore	Rs.In crore	Rs.In crore	
1	2009-10	0.17	0.12	143.21	11.59	4.72	0.17	0.17
2	2010-11	1.16	1.23	380.51	37.38	18.69	0.11	0.58
3	2011-12	8.96	14.87	3211.32	321.57	200.73	2.09	6.82
4	2012-13	9.32	15.17	3879.60	387.93	242.24	3.55	6.71
5	2013-14	8.28	13.91	3750.08	375.05	236.62	2.83	5.89

Average farm size, number of policyholders, annual premium, maximum payout, number of beneficiaries, and number of acres insured, Table 3 illustrates the development of Andhra Pradesh's crop insurance schemes from 1985-1986 to 2015-2016. The compound annual growth rates were computed, and it was stated that they are increasing. All areas showed positive compound growth rates, with claims paid to farmers showing the highest growth rate (26.45%), which is a loss to the government. The computed growth rates for insured farmers, insured land, insured dollars, premiums received, and insured farmers who benefited were 6.54, 7.39, 22.76, 21.1, and 11.42 respectively.

**Table 3. Overall growth Performance of Crop Insurance Scheme**

S. No	Year	No. of Farmers insured	Area insured	Sum insured	Premium collected	Claims Paid	No. of farmers benefited
		No.in lakh	Ha.in lakh	Rs.in Crores	Rs.in crore	Rs.in crore	No.in lakh
1	1985-86	8.67	16.77	214.11	3.90	5.65	0.95
2	1986-87	6.56	16.97	233.07	4.27	39.49	3.30
3	1987-88	9.99	20.85	348.96	6.11	11.58	1.47
4	1988-89	4.02	6.65	115.03	1.95	2.53	0.49
5	1989-90	7.97	13.09	251.68	4.38	24.43	0.83
6	1990-91	2.91	4.85	110.59	1.98	4.78	0.50
7	1991-92	6.49	10.98	248.29	4.97	31.75	2.44
8	1992-93	8.66	15.00	350.31	6.11	17.14	1.83
9	1993-94	8.84	14.52	402.59	6.98	4.82	0.81
10	1994-95	10.02	16.87	507.38	8.53	25.70	2.11
11	1995-96	11.20	17.05	577.61	9.85	18.59	1.64
12	1996-97	12.06	19.58	3808.37	27.39	74.7	6.26
13	1997-98	12.92	22.11	7039.13	44.94	130.97	10.88
14	1998-99	13.78	24.64	10269.88	62.48	187.16	7.88
15	1999-2000	14.64	27.17	13500.64	8.03	243.35	8.74
16	2000- 01	15.50	29.70	16731.40	97.57	299.54	9.60
17	2001- 02	16.37	32.23	19962.15	115.12	355.73	10.46
18	2002- 03	17.23	34.76	23192.91	132.67	411.92	11.32
19	2003- 04	18.09	37.29	26423.66	150.21	468.11	12.18
20	2004- 05	18.95	39.82	29654.42	167.76	524.31	13.04
21	2005- 06	19.1	42.35	32885.18	185.30	580.50	13.90
22	2006- 07	20.67	44.88	36115.93	202.85	636.69	14.76
23	2007- 08	21.53	47.41	39346.69	220.39	692.88	15.62
24	2008- 09	21.53	49.94	42577.45	237.94	749.07	15.62
25	2009- 10	33.64	49.94	45808.20	237.94	749.07	27.73
26	2010- 11	28.35	40.92	49038.96	259.23	784.17	22.44
27	2011- 12	280.49	431.89	54238.96	1835.91	4585.64	70.95
28	2012- 13	284.67	239.30	68368.64	925.52	91657.82	45.98
39	2013- 14	28.86	46.72	11850.05	798.27	64734.38	21.00
30	2014- 15	28.86	46.71	11849.93	205.29	7017.33	20.96
31	2015-16	7.31	40.66	11574.69	648.08	269.74	2.81
32	2016-2017	7.67	43.86	22459.63	122.81	652.12	3.26
	CAGR	6.54	7.39	22.76	21.51	26.45	11.42

## CONCLUSION

India is a rural nation, and its agricultural sector is its economic backbone. Almost two-thirds of the country's people get their main income from farming. Indian agriculture is the backbone of the country's economy. About 26% of the country's GDP may be attributed to this sector. Area and yield variability, as well as their interplay, account for the vast majority of the variation in agricultural output. Area planted varies primarily in reaction to the spatial and temporal distribution and variability of precipitation and other meteorological elements, predicted pricing, and the availability of crop-specific inputs. Since its inception in 1972, crop insurance in the United States has been fraught with problems, such as a lack of transparency

and payments that are either late or never sent at all to farmers. India has had three crop insurance programmes (NAIS, MNAIS, and WBCIS) until very recently.

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