

A Study on Performance of Crop Insurance Schemes In India

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ABSTRACT

The aim of this study is to compare the crop insurance systems implemented by the Indian government since their inception in the year 1972. The primary purpose of designing a crop insurance policy was to protect farmers from a variety of natural disasters. It was also determined to investigate farmer's expectations and solve the most basic hazards, as evidenced by data gathered from Agricultural insurance corporation of India from the year 1972.

KEYWORDS: Crop insurance, Insurance industry, Agriculture.

Introduction

[1] AICI(2020) as per the report, India is an agrarian country where 119 million people are farmers covering 163 million hectares of land. [3] Economic Survey(2019) reveals that the share of agriculture in GDP is 18.4% in 2019-20, it happens to be the life line of India and Indian economy as about 75% of India's total population are directly or indirectly engaged in agriculture. For more than 58 percent of India's population, agriculture is their primary source of income. Agriculture accounts for over 19.9% of India's gross domestic output, according to the 2020-2021 economic survey. [6] Alexander(2019) says that the GDP will expand by 17.8% in 2019-2020, making it the sole sector to see positive growth of 3.4 percent at constant prices in 2019. [4] Raju, et.al (2007) says that, the first stage of crop insurance in the year 1915 under the name of rainfall insurance performance was analyzed.

Due to financial restrictions at the state level, however, the new sectoral approach methodology was not accepted. [23] Rao(2019) reveals that, Vast majority of farmers in India (80%) are small and marginal who hold less than 2 hectares of land and most of those families live below poverty line.

Despite India's substantial reliance on agriculture and its status as the world's second largest producer of major agricultural commodities, agriculture is the most volatile business in the country, putting the lives of 119 million farmers at risk. Indian farmers are especially exposed to threats such as changes in rainfall, temperature fluctuations, hailstorms, cyclones, drought, floods, and cold waves because of their reliance on the weather. [10] Chakravarti, J. S. (1920) discussed about the various risks related to financial services, including a limited range of risk mitigation instruments such as credit and insurance, are exacerbated by a lack of financial services, including a limited range of risk mitigation instruments such as credit and insurance, which are associated with poor rural infrastructure, imperfect markets, and agricultural fields have a scarcity of financial services, including a limited range of risk mitigation instruments such as credit and insurance. All of these factors have a significant impact on farm production and revenue, and they are out of farmer's control. Agricultural insurance is the only measure that may successfully reduce farmer losses in India in this situation. Despite the fact that risk management in agriculture is a top priority for the Indian government and policymakers, the country's agricultural insurance progress over the year has fallen short of protecting Indian farmers, particularly small and marginal farmers. According to the [24] National Agriculture Policy (2020), discussed about despite technological and economic progress, farmers' livelihoods remain precarious due to natural disasters and market swings. In certain situations, these unfavourable circumstances constitute one of the elements contributing to farmer suicides, which are currently reaching epidemic proportions. Crop insurance re-establishes farmer trust, stabilises farm revenue, and aids farmers in resuming production after a low yield or benefit. [9] Berra, S. (2019) aimed to reduce the impact of yield loss by offering farmers with a minimal level of protection and assisting farmers in making additional agricultural investments.

[22] Mukherjee, S., & Parthapratim, P. (2019) says, Creation of awareness with the farmers about the crop insurance policy only create a better path to the farmers benefit and it will help the Government to achieve the goal for producing crop insurance schemes. As a result, the Indian government drafted a Crop Insurance Premium and a model crop insurance plan to

allow states to start crop insurance. As a case study, the impact of insurance on farmer’s risk attitudes in India was explored in this paper.

Crop Insurance schemes in India from 1972

The Department of General Insurance of the LIC of India developed the first crop insurance programme, dubbed the first ever crop insurance system, on a trial basis in 1972-78. This plan was built on a one-on-one strategy. To enrich the existing policy with “Homogeneous Area approach”. Professor V. M. Dandekar proposed the plan, which was named Pilot Crop Insurance Scheme and implemented in 1979. Due to the voluntary participation of state government, it can’t be able to reach the motto. So, the extension of the above scheme was introduced the Comprehensive Crop Insurance Scheme in the year 1985. The technique of Homogeneous Area Approach was added to this plan, which was then linked to short-term agricultural financing. CCIS was discontinued from Kharif 1999 and replaced by “National Agriculture Insurance Scheme” (NAIS), which is being continued up to 2012.

Due to insufficient data, in this paper take a data from the NAIS schemes onwards for analysis purpose. NAIS was introduced from the year 1999, which provides complete hazard insurance that will cover yield losses caused by unavoidable hazards, such as -

- Lighting & Natural Fire
- Lightning storm, hurricane, monsoon, maelstrom, hurricane, and tornado are all terms used to describe a storm.
- Flooding, inundation, and landslides are all examples of natural disasters.
- Droughts and Dry Periods
- Pest/Diseases etc.

Loanee farmers on a mandatory basis, as well as all farmers who do not have a loan who choose to participate in the scheme for notified crops. This plan allows for a 10% premium subsidy to small and farmers who do not have a loan marginal farmer to be paid equally between the state and the federal government, and it is now in use in 27 states and two federal territory.

The NAIS suffers from some serious drawbacks especially if we look at the loss assessment policy under the scheme from farmer’s point of view. The system is based on the "Area Approach," which means that all insured farmers cultivating the same crop in the same area will get the very same claim payment. Many times, crops in a specific area of a block are destroyed but not the entire block, resulting in a situation where the farmer suffers significant losses but the reported part still has a yield over the threshold level. As a result, the farmer is no longer eligible to file a claim. Second, the complaint resolution process is extremely time-consuming. Third, because non-loanee farmers participate in such a small percentage of the scheme, it is often referred to as Bank Loan Insurance rather than Crop Insurance.

Year wise From Kharif 1999-2000 to Kharif 2012, NAIS's overall performance in India

Table-1

Kharif Session	Number of Farmers Insured (million)	Area Insured (million hectare)	Sum Insured (million Rs)	% of Farmers Benefitted
2000	8.41	13.22	69,033.80	43.23
2001	8.70	12.89	75,024.60	20.03
2002	9.77	15.53	94,316.90	43.99
2003	7.97	12.36	81,141.30	21.48
2004	12.69	24.27	1,31,706.20	21.08
2005	12.67	20.53	135,191.00	21.19
2006	12.93	19.67	147,593.60	24.22
2007	13.40	20.76	170,079.60	11.88
2008	12.99	17.64	156,660.70	32.47
2009	18.25	25.77	276,167.10	43.67
2010	12.68	17.11	237,110.70	17.77
2011	11.56	15.78	234,871.00	15.97
2012	10.65	15.69	271,813.60	17.83
Total	152.67	231.21	2080710.10	25.98

Year wise From Rabi 2000 to Rabi 2011-12, NAIS has an all-India performance.

Table-2

The	Rabi Session	Number of Farmers Insured (In millions)	Area Insured (Million hectare)	Sum Insured (Million Rs.)	% of Farmer Benefitted
	1999-00	0.58	0.78	3564.10	9.48
	2000-01	2.09	3.11	16026.80	25.19
	2001-02	1.96	3.15	14975.10	23.17
	2002-03	2.33	4.04	18375.50	39.83
	2003-04	4.42	6.47	30494.90	47.46
	2004-05	3.53	5.34	37742.10	21.89
	2005-06	4.05	7.22	50716.60	24.23
	2006-07	4.98	7.63	65422.10	27.96
	2007-08	5.04	7.39	74666.40	31.30
	2008-09	6.21	8.86	111487.10	31.88
	2009-10	5.68	7.90	110075.00	18.36
	2010-11	4.97	6.94	110105.60	22.91
	2011-12	5.24	7.61	112839.40	24.58
	Total	51.08	76.43	756490.70	27.87
	Total(Kharif+Rabi)	203.74	307.64	2837200.80	26.45

NAIS coverage is growing in all areas, including the area covered, the number of farmers insured, and the total amount insured. The number of CCEs (Crop cutting Experiment) necessary to obtain final yield data varies depending on the area and crop type. Because the experiment is conducted at the taluka level, data collection at the district, state, and national levels takes a long time, frequently up to a year. So, the claim payout will be delayed. Second, it is aware of the term "Bank Loan Insurance". Due to the lack of awareness about Bank loan insurance the crop insurance scheme's consumption level became very low. As a result, only 26.4 percent of farmers have benefited.

Modified National Agricultural Insurance Scheme (MNAIS)

After a decade the NAIS scheme enrich with some special features and introduce the new scheme in the name of Modified National Agricultural Insurance Scheme from Rabi 2010-11. Some salient features of MNAIS, inter-alia, include:

- For main crops, the insurance unit is the panchayat (village council) or an equivalent.
- Post-harvest losses induced by tropical cyclone rains are calculated at the farm level for agricultural crops and left in 'cut and spread' state for up to two weeks.
- In the event of regional catastrophes such as storms and earthquakes, individual agricultural damages are assessed.
- Payment on account of up to 25% of the expected claim as an advance to provide prompt aid to farmers in the event of catastrophic tragedies.
- There is a 70 percent minimum indemnity level accessible (as a replacement for of 60 percent as in NAIS).
- External financing, such as smaller insurance agents, can also help non-loanee farmers.

All India Performance of MNAIS from Rabi 2010-11 to Rabi 2013-14

Table-3

State/UT	No of Farmers covered (In Million)	Area Insured (In Million Hectares)	Sum insured (In million Rs.)	% Of farmers benefited
Andhra Pradesh	1.18482	0.130275	0.517800	0.08
Assam	0.01699	0.01267	0.04954	0.08
Bihar	0.83641	0.93630	1.88360	0.07
Chhattisgarh	0.72	0.03	0.05	0.02
Gujarat	0.43	0.059	0.02061	0.03
Haryana	0.10167	0.021099	0.85306	0.01
Jharkhand	0.01169	0.00604	0.01459	0.01

Karnataka	0.56261	0.097153	0.0154931	0.03
Madhya Pradesh	0.07898	0.0015099	0.19773	0.01
Maharashtra	0.5196	0.04962	0.07621	0.02
Mizoram	0.51	0.049	0.99	0.03
Odisha	0.11970	0.08732	0.29707	0.02
Rajasthan	2.38564	2.56813	2.71291	0.41
Tamilnadu	0.40498	0.44139	0.97098	0.03
U.P.	0.84084	0.083241	0.191218	0.03
Uttarakhand	0.04589	0.04187	0.12809	0.01
West Bengal	0.81639	0.29351	2.41578	0.01
Total	7.50382	0.790662	1.824271	0.01

The MNAIS was widely criticized due to higher rate of premium as compared to NAIS, capping on the amount of the insurance cover and coverage for post - harvest losses were restricted to coastal regions. The decrease of the insurance unit to the level of the Village Panchayat had exponentially increased the workload required for crop cutting experiments (CCEs) making the scheme costlier and time consuming.

Weather Based Crop Insurance Scheme (WBCIS)

Under MNAIS, the climatic related Weather-based Crop Insurance is designed to protect insured farmers from financial losses resulting from crop losses caused by bad weather conditions such as rain, temperature, frost, and other factors. [7]Anjum., & Tiwari. (2011) says, WBCIS is a one-of-a-kind crop insurance policy that protects growers from crop yield losses caused by severe weather. It pays out in the event of adverse during the kharif season, there is a lot of rain. , as well as adverse weather conditions such as frostbite, warmth, humidity levels, unseasonal rainfall, and so on. During Rabi, the programme will be piloted in a few states and for a few crops. The programme is based on the Area Approach, which means that a Reference Unit Area (RUA) is treated as a storage system of insurance for the purposes of compensation. The state government must notify this RUA prior to the start of the session, and all insured growers of a given covered crop in that region will be treated equally in the evaluation of claims. A Reference Weather Station (RWS) is connected to each RUA and acts as the foundation for processing current weather data and claims. Each RUA is connected to a Reference Weather Station (RWS), which serves as the foundation for processing current weather data and claims.

Status of WBCIS from Kharif 2007 to Kharif 2013

Table-4

Kharif Session	Farmers Insured (Millions)	Area Insured (million hec.)	Sum Insured (in Rs.)	% of Farmers Benefitted
2007	44	50	530	81
2008	184	221	3510	59
2009	1161	1531	21160	78
2010	4919	7391	56820	36
2011	6909	9788	108670	52
2012	8008	11125	128710	84
2013	8927	11230	146380	63
Total	30152	41336	465780	62

Status of WBCIS from Rabi 2007-08 to Rabi 2012-13

Table-5

Rabi Session	Farmers Insured (million)	Area Insured (Million hec.)	Sum Insured (in Rs.)	% of Farmers Benefitted
2007-08	635	1018	17390	30
2008-9	192	261	5360	63
2009-10	1202	1891	28580	50
2010-11	4386	5757	86490	58
2011-12	4766	5945	98580	57
2012-13	5606	6992	107330	72
Total	16785	21865	343730	61

During the period from 2007-08 to 2012-13 total 4,69,37,000 farmers were covered, of which 3,01,52,000 farmers were insured during Kharif sessions and 1,67,85,000 farmers were insured during Rabi session. During the period total 6,32,01,000 hectares area was insured. To construct a baseline, the scheme requires 25 years of rainfall and meteorological data. The likely disparity in rainfall and weather experience between the weather station location and the farmer's field is another grey area. To reasonably eliminate the differences, every hamlet should have a weather station, which would necessitate a nearly 50-fold increase in the country's existing weather station network.

Pradhan Manthiri Fasal Bima Yojana Crop Insurance Scheme (2016):

The PMFBY is a complete crop insurance system that protects crops from non-preventable natural disasters from pre-sowing through harvest. The insurance costs for Kharif and Rabi crops have been set at 2% and 1.5 percent, respectively. Farmers must pay an increased premium of 5% for commercial and horticultural crops. The rest of the premium is split between the federal and state governments, ranging from 98.5 percent for Rabi crops to 95 percent for commercial crops.

During the 2017-18 kharif season, this crop insurance scheme earned over 85% profit, excluding administrative expenses and reinsurance, according to government figures. All 17 insurance companies arraigned underneath the Pradhan Mantri Fasal Bima Yojana (PMFBY) posted a margin of Rs 15,029 crore, according to data from the Agriculture Ministry, as they paid out Rs 2,767 crore in claims against the Rs 17,796 crore in premium received. [5] D Hebsiba Beula et,al (2021)Service Tax is not applicable to PMFBY (now a part of GST). Similarly, during the kharif 2017-18, Under a different crop insurance strategy, the same companies achieved a profit of over 96 percent. The RWBCIS (Restructured Weather-Based Insurance Scheme) got Rs 1,694 crore in premiums but only paid out Rs 69.93 crore in claim settlement. Due to a lack of claim settlement during the previous kharif (2016-17) season, insurance providers made a 44 percent profit, receiving Rs 15,735 crore while incurring Rs 8,862 crore in claims from farmers.

Performance of PMFBY:

Year	Farmer (Million')	Insured	Area Insured (million hec.)	% of Farmer Benefitted
2016	40,258,737		37,682,608	25.2
2017	34,776,055		34,053,449	32.5
2018-19(Kharif)	34,30,000		31,00,000	42.3

To ensure agricultural insurance more affordable for farmers, the government currently pays 80 percent to 85 percent of the premiums. As a result, the PMFBY is practically funded by the government. To ensure agricultural insurance more affordable for farmers, the government currently pays 80 percent to 85 percent of the premiums. As a result, the PMFBY is practically funded by the government. To market the PMFBY, enroll producers who have taken out crop financing, collect subscriptions, process claims, specify the amounts covered for particular crops, and estimate crop damage, private insurers make considerable use of public infrastructure. Having a trust run the crop insurance programme would clearly result in a far more efficient use of limited national funds than operating with corporate mediators and subscribing for their overheads and profits. This is supported by a comparison of the PMFBY and the National Agricultural Insurance Scheme's experiences.

CONCLUSION

Agriculture has a huge influence on the Indian economy and society. The world has changed dramatically, but we haven't been able to modify Indian agriculture quite as much. In order to protect Indian farmers, new risk-management systems must be introduced. The appropriate implementation of comprehensive crop insurance policies will go a long way towards reducing India's alarmingly high rate of farmer suicide. Crop insurance in India requires the complete backing of the government, the Insurance Regulatory and Development Authority (IRDA), and other insurance institutions. The country urgently needs the establishment of an independent Crop Insurance Authority, as the current system fails to meet the demands of Indian farmers.

According to the tables above, farmers and insurance companies benefit equally. GIC (General Insurance Corporation of India) was the sole corporation involved in crop insurance schemes when they first started. Many private insurance

companies have been participating in the claim settlement procedure since the year 2000. Having a trust run the crop insurance programme would clearly result in an even more efficient use of limited national funds than operating with corporate mediators and subscribing for their overhead cost and profits. This is supported by a comparison of the PMFBY and the National Agricultural Insurance Scheme's experiences.

In conclusion, PMFBY was established with high hopes of resolving existing scheme flaws. However, the programme had a number of flaws, including a heterogeneous approach, the collecting of agricultural production data, and a protracted claim settlement process. As a result, the author finds that the scheme's supply-side approach policies are necessary for all loanee farmers, but it later becomes voluntary. It also ignores demand-side measures and their problems. Insurance companies earned Rs. 22,338 crore in premiums in 2016-17, a four-fold rise year-on-year that was primarily subsidized by the federal and state governments, according to the statistics. However, only Rs. 5,875 crore, or 45 percent, of the expected claims (for the kharif and rabi crop seasons) has been paid to farmers as of July 21, 2019. Claims related to the kharif crop, which was gathered in November last year, are estimated to be worth Rs. 10,257 crores, with Rs. 4,649 crores, or 45 percent, resolved. According to reports, PMFBY has taken awhile to pay farmers the claim amount. To strengthen the plan, the government should embrace current crop insurance technologies like using Drones, Block chain technology and effective usages of Satellites and also increase number of weather monitor station to predict the climatic changes in delta areas, which will eliminate moral hazards. It will make the claim settlement procedure run more smoothly. Farmers will have more optimism and faith in crop insurance as a result of it.

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