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Agriculture and Crop Insurance: A Study

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Abstract
The agricultural sector in India is very vulnerable to various risks, particularly of climate change. Precautions must be made to guarantee farmers' continuous access to financing and protection from natural disasters during the next planting season. To that goal, the government of India has established a host of agricultural programmes around the nation. This article provides an overview of thecrop losses and the various strategies available to cope up with these losses. Government has also taken various steps in mitigating losses for farmers. One such option is crop insurance schemes which have been examined using various secondary sources. To ensure that farmers throughout the country have the same access to crop insurance, the federal government has partnered with commercial Crop Insurance providers like ProAg. Authorized intermediaries represent reputable insurance companies in marketing this coverage (AIPs). To handle the marketing, underwriting, and adjusting of claims for Crop Insurance policies, ProAg and the other AIPs annually sign a contract with the Federal Crop Insurance Corporation (FCIC). This contract is known as a "Standard Reinsurance Agreement" (SRA). The various insurance agencies must file reports with the federal government. Furthermore, they must be in charge of instructing and overseeing all agents and subordinates under their command.

Keywords: *Agricultural Sector, Crop Insurance policies, Standard Reinsurance Agreement, Federal government.*

Introduction
The new Crop Insurance Scheme will continue the tradition of "One Nation - One Scheme." It incorporates the best ideas from prior blueprints while fixing their flaws. Specifically, it is recommended that a 2% flat premium be levied on all Kharif crops and a 1.5% flat premium be levied on all Rabi crops. In monetary terms, this would be a huge relief for farmers. That benefit might theoretically be expected by any crop. Premiums for crop insurance for annual crops farmed for commercial or horticultural purposes will be capped at 5% for farmers. In the case of crop loss due to natural catastrophes, farmers will get the entire insured amount, despite paying relatively modest premiums, since the government would cover any remaining premium costs. It safeguards farmers from financial ruin in the case of crop loss. In theory, there is no upper limit to how much money may be demanded from the government. The government must pay the whole premium, even if the remaining amount is just 10%. The amount of money handed out to farmers was cut because of the limited premium rates. It was calculated that if these restrictions were enforced, the government might save money on premium subsidies. This limitation is no longer in place, therefore farmers may submit claims up to the full amount of their insurance. In addition to facilitating the use of different technical methods, the goal is to provide moral support and encouragement to those involved. Data will be gathered and uploaded using smart phones in the future in an effort to decrease the amount of time that elapses between the harvest and the payment of claim money to farmers. Using remote sensing technologies, farmers might cut down on the number of crop cutting trials they do.

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Literature review

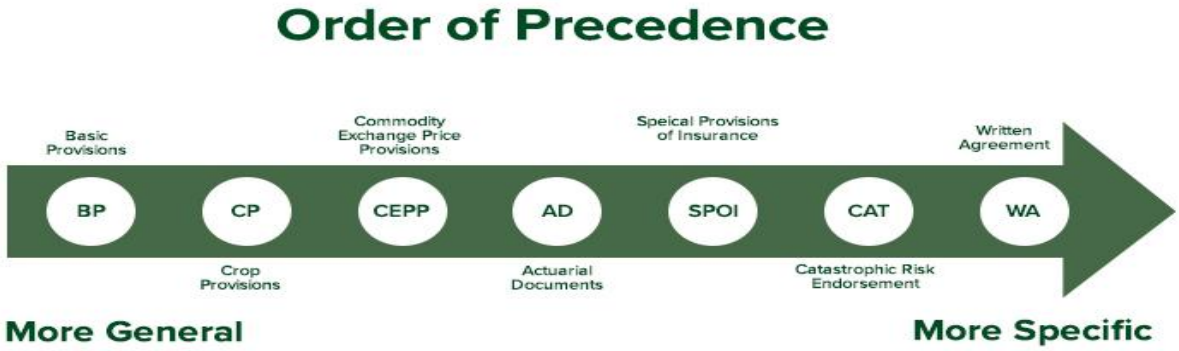
- The agriculture sector is crucial to the economic development of a nation like India. In terms of the benefit it has brought to the world, it can be summed up in a single phrase: it is the greatest human endeavour ever. If agriculture were to be completely developed, it may potentially improve employment possibilities and national wealth. Many of today's industrialised nations built their economies on the backs of thriving agricultural sectors. Agriculture is a crucial industry because of its ability to reduce poverty and increase other societal benefits such as employment, exports, imports, transportation, and government income. Income from agriculture has the ability to help rural communities, which might be crucial to the growth of economies in developing nations (Dethier and Effenberger ,2012). As a result, agriculture is crucial to a nation's overall progress.
- Shriaan and Hasaan (2018) found that the development of India's agricultural sector led directly to the expansion of the country's economy as a whole. Finally, India should invest in agriculture with its money, technology, and people if it wants to grow quickly and fairly for all its citizens. Indian agriculture is dominated by a large population of landless labourers and smallholders, who are particularly susceptible to the detrimental impacts of climate change. The agricultural industry in India has four main challenges: production, market price, government policy, and the environment (Joshi, 2015).
- According to the findings of the study that Mahadevan (2004) carried out, there is a significant gap in the harvests that are brought in by the various kinds of agricultural products. There is a wide range of possible explanations for this disparity in output, including variances in physical resources, climatological conditions, and institutional characteristics. It's possible that natural disasters caused by climate change, such floods, cyclones, storms, heat/cold waves, and droughts, will have an adverse effect on agricultural productivity. Climate factors that may either directly or indirectly contribute to agricultural risks include shifts in temperature, varying patterns of precipitation, and the availability of water supplies (Khan et al, 2016). It is also projected that in the future, natural catastrophes such as floods and droughts may occur with greater frequency, which would result in an even greater loss in agricultural productivity (Lesk, et al, 2016).
- India's agricultural industry has various obstacles, particularly during the pre- and post-harvest seasons. In Oerke's (2012) research, he discovered that pre-harvest losses were caused by diseases and insects. Insects and other pests were predicted to ruin 37.5 percent of the world's rice harvest, 28.2 percent of the wheat harvest, 31.2 percent of the maize harvest, and 26.3% of the soybean harvest. Dhaliwal and his colleagues' studies on different types of crops provided more evidence for this (2010). Even more so, bug problems have become more severe in the age after the Green Revolution as compared to the one preceding it.

- In most developing nations, grain is lost on small family farms during planting, processing, and storage (Manandhar et al., 2018). Ten percent to twenty percent of stored grain is eaten by insects. Post-harvest loss is another risk for farmers due to a lack of storage facilities and an ineffective rural transport infrastructure. Using production statistics from 2012–12 and the wholesale price from 2014, a research projected that the total value of harvest and post-harvest losses for the main agricultural and animal crops in India was around Rs 92651 crore (Jha et al, 2015). It has also been suggested that mounting debt and unpaid loans contribute to the high rate of farmer suicides in India (Ramesh et al, 2016).
- Crop diversification, intercropping, farm fragmentation, diversification, and risk coping mechanisms are not especially successful traditional means of risk reduction. (Hazell,1992). The best way to combat climate change, therefore, is via crop insurance (Falco et al., 2014). Since the 1970s, several crop insurance programmes have been tried, with limited success. The National Agricultural Insurance Scheme (NAIS) was updated in 2010 to become the Modified National Agricultural Insurance Scheme in response to comments from the general public and industry professionals (MNAIS).
- According to the study, the poor performance of the NAIS may be attributed to its restricted coverage as well as its delayed payments during the indemnity period (Patnaik and Swain, 2017). Even the insurance companies themselves feel that crop insurance is not a viable business; in fact, they see it more as a liability than an advantage. Crop insurance is not a company that is likely to succeed (Venkatesh, 2008).
- According to the research carried out by Bindiya and Jigna (2013), the reasons that farmers do not make use of crop insurance are a lack of awareness, the use of non-institutional sources of loan money, a lack of cooperation from financial institutions, and a fear on the part of the farmers to carry out the procedures that are involved.
- A decrease in farmers' information holdings may be attributed to a lack of faith in the current insurance system, as reported by Gulati et al. (2018). Government agencies, insurance companies, and banks should all have a role in informing farmers about the problem. The government of India has taken the bold step of modernising its crop insurance programmes, but several operational concerns must be fixed before the programme can reach its full potential. The adoption of more open methods requires the building of trust among farmers.

What Crop Insurance Agents Do

Crop insurance agents deal with both new business and existing policyholders. Agents are responsible for both of these functions. The software provides coverage for over a hundred distinct crops and commodities in a wide number of permutations. Regulations controlling crops and programmes are subject to frequent revision due to the high degree of diversity

amongst them. Insurance firms pay agents a commission annually per the provisions of an agency agreement. In exchange, the agent will explain different types of coverage and their associated costs, as well as gather information on the insurance on a regular basis. It's possible that policy information varies greatly not just across nations, but also between states, and even between counties. In light of this, the policy is divided up into many sections. Numerous books and articles examine the subject, comparing and contrasting various aspects of the phenomenon. Substantial alterations may occur on a yearly, quarterly, or even monthly basis. It is anticipated that agents would have a thorough understanding of the local farming practises and growth plans. It is essential that the Common Crop Insurance Policy be implemented correctly and that all of its duties be honoured, and this can only be done via the establishment of provisions.For instance, the Basic Provisions define Crop Insurance in general and the many insurance alternatives that are accessible to you. Given that not all available alternatives are applicable to all crops, the information offered by crop provisions is crop-specific.



Evolution of Various Schemes of Crop Insurance in India

First Crop Insurance Scheme: In the 1972–1973 ,the general insurance section of Life Insurance Corporation of India launched the world's first crop insurance plan in the Indian state of Gujarat (LICI). Our plan covered H-4 cotton harvests with insurance. Following the nationalisation of the General Insurance Corporation of India (GICI) the previous year, the initiative was rolled out in states outside Gujarat. In addition to Maharashtra and Tamil Nadu, these new states comprised West Bengal, Andhra Pradesh, and Karnataka. Peanuts, wheat, and potatoes were suggested for inclusion because of the plan's "individual approach"8 foundation. Only 3,110 farmers were eligible to enrol in the programme due to the high premiums (an average of Rs. 4.54 lakhs) and claims (an average of Rs. 37.88 lakhs). All of the way through the 1977-1978 academic year, this rule remained in effect. The idea was doomed from the start due to the clear ineffectiveness of an individualised approach un the United States. This was the reason why the plan didn't work. As the total number of claims was far more than the total amount of premiums, the strategy was not profitable. The Pilot Crop Insurance Scheme may then get off the ground.

Pilot Crop Insurance Scheme (PCIS): GIC invited Prof. V. M. Dandekar (widely recognised as the "Father of Crop Insurance in India") to come up with a strategy for agricultural insurance. By 1979, GIC had begun implementing the Pilot Crop Insurance Scheme (PCIS) that he had suggested. In all, 9 states took part after the program's first rollout over 26 sites in Gujarat, 23 locations in West Bengal, and 17 locations in Tamil Nadu. Planting cereals, millets, oilseeds, cotton, potatoes, gramme, and barley were all part

of the "area approach"9 blueprint. The Government Investment Corporation (GIC) and the many state governments each assumed 50% of the total risk. Although the maximum insured amount was originally set at 100% of the crop loan, it was increased to 150% in succeeding years. The premiums for this insurance were between 5% and 10% of the total amount of coverage. During its tenure, the plan collected Rs 195.01 lakhs in premiums from 6.23 million farmers across 12 states but paid out just Rs 155.68 lakhs in claims.

Comprehensive Crop Insurance Scheme (CCIS): After PCIS fell short of goals, the central government of India and the individual states that make up India collaborated to create CCIS on April 1, 1985. Under this system, which was based on the idea of homogenous zones, farmers who took out crop loans from banks were mandated to cultivate food crops and oilseeds. There were a total of 15 states and 2 Union Territories involved when the initiative was scaled down in 1999. The territories of Andaman and Nicobar Islands and Pondicherry were also included. The states represented were Andhra Pradesh, Assam, Bihar, Goa, Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Tamil Nadu, Tripura, and West Bengal. The federal government and the individual states shared equally in the premium rate of 2% for grains and millets and 1% for pulses and oilseeds. Initially, crop insurance would cover up to 100% of the loan amount, but later on, coverage would expand to 150%.

National Crop Insurance Programme (NCIP) / Pradhan MantriFasalBimaYojana (PMFBY)

After the National Agricultural Insurance Scheme (NAIS), the Pilot Weather-Based Crop Insurance Scheme (WBCIS), the Pilot Modified National Agricultural Insurance Scheme (MNAIS), and the Pilot Coconut Palm Insurance Scheme (CPIS) merged, the Central Sector Government created the National Crop Insurance Program (NCIP). The programme, which began in the middle of the Rabi fiscal year 2013-2014, is currently being used by all departments. Currently NCIP has been addressed as Pradhan MantriFasalBimaYojana (PMFBY). Borrowing farmers would have to join the NCIP component-scheme approved in their state, while non-borrowing farmers may choose between MNAIS and WBCIS. As part of the National Crop Insurance Program (NCIP), the Agriculture Insurance Company of India (AIC) is already involved; however, private insurers that have the necessary expertise and infrastructure are encouraged to do so as well (AlC). The PMFBY is different from previous schemes as the cap on premium rates have been removed and now farmers will get claim against full sum insured without any reduction

Conclusion

The results of the study indicate that the premiums for crop insurance are much more expensive for farmers whose farms have a higher output compared to those farmers whose farms have a lower productivity in terms of crop production. This is as a result of the fact that farms with higher output achieve their higher levels of production in part by using agricultural practises that have an impact that is destructive to the environment that is around the farm. The vast majority of the farmland was put to use for agriculture that was only moderately diversified and made substantial use of pesticides by farms that had higher average crop insurance values. This kind of agriculture occupied the bulk of the acreage. The vast majority of the available land was used for this kind of agriculture. Earnings or the chance of increased savings as a consequence of running the farms were other factors that contributed to their levels of productivity. These farms also got the biggest sums of operating subsidies, which contributed to their success and made them more competitive. In order to ensure that farms are adequately ready for everything that may come their way,

this is of the biggest significance. This research may also demonstrate the viability of self-insurance as a method for risk management. Additionally, it may highlight the potential complementarity that exists between crop insurance and the implementation of certain measures that increase production. The evidence presented here lends credence to both of these ideas.

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