AGPE THE ROYAL GONDWANA RESEARCH JOURNAL
OF HISTORY, SCIENCE, ECONOMIC, POLITICAL AND SOCIAL SCIENCE
ISSN (E): 2583-1348 | A Peer reviewed | An Open Access & Indexed
Volume 07 | Issue 09 | September 2026 | *www.agpegondwanajournal.co.in* | Page No. 16-24

AN ECONOMIC STUDY ON CROP INSURANCE IN INDIA: ISSUES AND CHALLENGES

Dr. M. Santhoshkumar
Assistant Professor,
Department of Economics, Thiruvalluvar University,
Vellore, Tamil Nadu, India.

~~~~~~

Abstract

Agriculture is one of the most significant economic activities in India. It is major contributor to the gross domestic product (GDP), and it provides livelihood to majority of the country. Crop insurance gives farmers financial support when their crops are damaged due to natural disasters. The present article explains how crop insurance insulates the farmers against crop failure. Although the crop insurance has been in the country, yet it has several problems such as transparency, high premium. In this paper, we examined the various crop insurance schemes introduced in India on time to time. The present study undertaken on the topic titled Crop Insurance in India: Issues and challenges with the objectives is to study the Agricultural Insurance in India and to study the issues and Challenges of Agricultural Insurance in India. The study is based on secondary data only. The research work is carried out because of descriptive research design. The major source of data for the study from the articles, books and websites. This paper tries to elicit the issues and challenges of Agricultural Insurance in India.

Keywords*:* Crop Insurance, Agriculture and Farmers, Crop Loss, Insurance Coverage, Crop Failure, Financial Protection

Introduction

Agriculture is one of the most significant economic activities in India. It is major contributor to the gross domestic product (GDP), and it provides livelihood to majority of the country.

CORRESPONDING AUTHOR:	RESEARCH ARTICLE
Dr. M. Santhoshkumar Assistant Professor, Department of Economics, Thiruvalluvar University, Vellore, Tamil Nadu, India. Email: santhoshmurugan430@gmail.com	
~~~~~~

Agriculture remains the backbone of India's economy, providing livelihood to over 58.4% of the population and contributing significantly to GDP and exports. However, the sector is highly vulnerable to climatic uncertainties such as floods, droughts, and extreme temperatures, which pose serious risks to crop yields and farmer incomes. To mitigate these risks, the Indian government has introduced various crop insurance schemes over the decades, including the Comprehensive Crop Insurance Scheme (CCIS), National Agricultural Insurance Scheme (NAIS), and the Pradhan Mantri Fasal Bima Yojana (PMFBY). Despite these efforts, the penetration of crop insurance remains low due to limited awareness, implementation challenges, and lack of trust among farmers. Agriculture is the main source of income for more than half of India's population and plays a big role in the country's economy. However, farming in India depends heavily on the weather, especially the monsoon rains. This makes crops vulnerable to natural disasters like floods, droughts, and extreme temperatures. When crops fail, farmers face serious financial problems, and many small and marginal farmers struggle to recover. To help protect farmers from these risks, the Indian government introduced crop insurance. Crop insurance gives farmers financial support when their crops are damaged due to natural disasters. Over the years, several schemes have been launched, such as the Comprehensive Crop Insurance Scheme and the Pradhan Mantri Fasal Bima Yojana. These programs aim to reduce farmers' losses, stabilize their income, and encourage them to continue farming even after a bad season. Agriculture is a very risky profession given that it is affected by uneven distribution of rainfall, pest attacks, hail, other natural calamities like flood, drought, etc. "In case of severe declines in farm output, and hence farmers' incomes, governments have volunteered to help alleviate their negative impact. The free distribution of grain, free kitchens, remission of revenue and other taxes, payment of advances, construction of public works, and irrigation projects. According to a study conducted in India in 2002 majority of farmer suicides are caused due to failure of crops (16.84%) as compared to debt burden (2.65%), property disputes (2.65%), family problems with spouse or others (13.27%), losses in nonfarm activities (1.77%), other reasons (15.04%), etc., The present article explains how crop insurance insulates the farmers against crop failure.

Crop Insurance

India is one of the most disaster-prone countries in the world owing to its physiological and climatically conditions. Later the last decade, India has suffered crop losses almost every year either due to flood or drought or frost/extreme temperatures. Agriculture is the mainstay of the rural the economy in India and is largely run by small and marginal farmers, who have no access to credit, are highly dependent on rainfall and the majorities do subsistence farming. The rising frequency of farmer suicides in India because of requiring crop losses owing to seasonal changes has prompted policy makers to priorities crop insurance. Crop insurance not only stabilizes the farmhouse income but also helps the farmers to initiate production activity after a bad agricultural year. Crop insurance is a vital tool for mitigating production risks, yet its adoption remains low.

Background of Crop Insurance in India

The concept of crop insurance has arisen in India since the turn of the twentieth century as an idea for the management of farming risks. From concept to implementation, it has grown irregularly yet consistently during that time is yet creating as far as extension, procedures and practices. India is an agrarian country, where most of the populace relies upon farming straightforwardly or indirectly for their livelihood. Farming in India is still intensely subject to the climate and is seriously affected by its caprices like flood, substantial downpour, and tremor and so on and furthermore by assault of vermin and illnesses. These eccentric and wild incidental risks render Indian agrarian and amazingly unsafe enterprises. Here, emerges a need of legitimate component through which farmers can relieve their happened because of regular disasters. Crop insurance is one of the ways by which farmers can lessen their dangers dependent upon some degree. Crop insurance assumes an essential part in mooring a steady development of the area

Evolution of Crop Insurance Schemes

India has implemented several crop insurance schemes over the decades

Scheme Name	Duration	Notes
First Individual Approach Scheme	1972–1978	Initial pilot
Pioneer Crop Insurance Scheme	1979–1984	Early expansion
Comprehensive Crop Insurance Scheme (CCIS)	1985–1999	National rollout
Experimental Crop Insurance Scheme	1997–1998	Limited scope
National Agricultural Insurance Scheme (NAIS)	1999–2016	Major national scheme
Modified NAIS (MNAIS)	2010–2011	Improved version
Pradhan Mantri Fasal Bima Yojana (PMFBY)	2016–present	Current flagship scheme

The need for Crop Insurance

Natural disasters primarily harm poor farmers in developing countries. Crop insurance also protects farmers against the loss of crops due to natural disasters, extreme weather, or revenue loss owing to price fluctuations in the agricultural market. A farmer who struggles with his plough will be assured that, in the case of a disaster, he will at least receive some return**.**

Statement of the problem

Although the crop insurance has been in the country, yet it has several problems such as transparency, high premium. Delay in conducting crop cutting experiments and non-payment or delayed payment of claims to farmers. Then Farmers don’t have any knowledge about crop insurance scheme and small farmers have no incentive as they must pay premium to those financial institutions.

Objectives of the Study

The present study undertaken on the topic titled **An Economic Study on Crop Insurance in India: Issues and challenges** with the following objectives:

1. To study the Agricultural Insurance in India.
2. To study the issues and Challenges of Agricultural Insurance in India.
3. To present pertinent suggestions based on findings to cope up with issues and Challenges of Agricultural Insurance in India.

Research Methodology

The study is based on secondary data only. The research work is carried out based on descriptive research design. The major source of data for the study from the following:

a) Reports, Bulletins, Journals

b) Textbooks

c) Websites

Crop insurance schemes in India

National Agriculture Insurance Scheme

The Government of India experimented with a comprehensive crop insurance scheme which failed. The Government then introduced in 1999-2000, a new scheme titled "National Agricultural Insurance Scheme" (NAIS) or "Rashtriya Krishi Bima Yojana" (RKBY). NAIS envisages coverage of all food crops (cereals and pulses), oilseeds, horticultural and commercial crops. It covers all farmers, both loanees and non-loanees, under the scheme.

The premium rates vary from 1.5 percent to 3.5 percent of sum assured for food crops. In the case of horticultural and commercial crops, actuarial rates are charged. Small and marginal farmers are entitled to a subsidy of 50 percent of the premium charged- the subsidy is shared equally between the Government of India and the States. The subsidy is to be phased out over a period of 5 years.

NAIS operates based on Area
approach
On individual basis- for localized calamities such as hailstorms, landslides, cyclones and floods.

Under the scheme, each state is required to reach the level Gram Panchayat as the unit of insurance in a maximum period of 3 years. Agriculture Insurance Corporation of India is implementing the scheme. This scheme is replaced by Pradhan Mantri Fasal Bima Yojana.

Farm Income Insurance Scheme

The Central Government formulated the Farm Income Insurance Scheme (FIIS) during 2003-04. The two critical components of a farmer's income are yield and price. FIIS targeted these two components through a single insurance policy so that the insured farmer could get a guaranteed income.

The scheme provided income protection to the farmers by insuring production and market risks. The insured farmers were ensured minimum guaranteed income (that is, average yield multiplied by the minimum support price). If the actual income was less than the guaranteed income, the insured would be compensated to the extent of the shortfall by the Agriculture Insurance Company of India. Initially, the scheme would cover only wheat and rice and would be compulsory for farmers availing crop loans. NAIS (explained in the section below) would be withdrawn for the crops covered under FIIS but would continue to be applicable for other crops.

Livestock Insurance Scheme

Provide protection mechanism to the farmers and cattle rearers against any eventual loss of their animals due to death and to demonstrate the benefit of the insurance of livestock to the people and popularize it with the goal of attaining qualitative improvement in livestock and their products.

Weather-based crop insurance schemes

About 95 percent of the crop loss claims in India during the period 1985-2003 were attributed to rainfall issues. Of which 85 percent of them were due to a shortage of rainfall and 10% by excess rainfall. It was reported that 50 percent of the variations in crop yield was due to variations in rainfall. Apart from rainfall, the other parameters responsible for affecting crop production are soil moisture, sunlight, and temperature. In 2003-04, the higher temperature at the time of critical stages of cultivation and germination incurred a loss of approximately 4 million metric tonnes of wheat production.

Weather Based Crop Insurance Scheme (WBCIS) is a unique weather-based insurance product designed to provide insurance protection against losses in crop yield resulting from adverse weather incidences. In provides payout against adverse rainfall incidence (both deficit and excess) during Kharif and adverse incidence in weather parameters like frost, heat, relative humidity, un-seasonal rains etc. during Rabi season. As such it is not yield guarantee insurance. Weather Based Crop Insurance Scheme protects the farmers from losses due to the adverse condition of weather parameters like rainfall, temperature, humidity etc. It is optional for non-loanee farmers, and they can choose one scheme between Pradhan Mantri Fasal Bima Yojana and Weather Based Crop Insurance Scheme.

Modified national agricultural insurance schemes

This scheme was also protected the farmers from loss due to fluctuation in crop yield. Basically, it had worked as a component of national agriculture insurance scheme. The scheme will be implemented as a central sector scheme on a pilot basis in 50 districts during 2010-2011.

With the introduction of the modified scheme, it is expected that an increases number of farmers will be able to manage risk in agriculture production in a better way and will succeed in stabilizing farm income particularly at the times of crop failure an account of natural calamities. The private insurance companies were allowed to work as an insurer and the whole amount of claim had paid by the implementation agency. The notified area and notified crop were covered under this scheme for crops which past data were available covered under this scheme. WBCIS aims to mitigate hardships of insured farmers against likelihood of financial loss on account of anticipated crop loss resulting from incidence of adverse conditions of weather parameters like deficit or excess rainfall and other parameters like temperature, frost, humidity, wind, etc.

Objectives of MNAIS

MNAIS aims at sustainable production in agriculture sector, thereby ensuring food security, crop diversification and enhancing growth and competitiveness from agriculture sector, besides protecting farmers from production risks.

Loanee farmers are insured under 'compulsory category' while non-loanee farmers are insured under 'voluntary category'.NAIS is withdrawn for those areas/crops of districts, in which MNAIS (Modified National Agricultural Insurance Scheme) is implemented.

Pardhan Mantri Fasal Bima Yojana (PMFBY)

The scheme has introduced in 2016 with the slogan of one nation one scheme. The main purpose of this scheme is to protect the income of farmers for stabilize the income of farmers and motivate them to adopt new innovative technique in farming. The Central Government launched Pardhan Mantri Fasal Bima Yojana. This scheme covers all the crops for which past yield data is available and the crop cutting experiment can be conducted. The premium rates are 2 percent for Kharif crops, 1.5 percent for Rabi crops and 5 percent for annual commercial and horticulture crops. The difference between premium paid by the farmers and insurer rate of premium is shared by the Central and State governments equally. The scheme was also implemented on the area approach basis. It has the similar discipline for loanee and non-loanee farmers. The amount of claim is directly credited electronically to the farmers in their bank accounts. In 2020, the scheme was amended and made it completely voluntary for all the farmers whether they are loanee or non-loanee. In 2021, PMFBY has completed its five years to become "self-reliant farmers". On this occasion Union Agriculture Ministry said that claims worth Rs. 90,000 crores have so far been disbursed to farmers since the launch of the scheme on January 13, 2016.

Issues and Challenges Related to Agricultural Insurance

Issues Related to Nais

The farming community at large does not seem to be satisfied with the partial expansion of scope and content of crop insurance scheme in the form of NAIS over Comprehensive Crop Insurance Scheme (CCIS). There are issues relating to its operation, governance and financial sustainability. After extensive reviewing, gathering perceptions of the farming community and discussion with experts from AIC, agricultural department, bankers, academicians and other representatives in Andhra Pradesh on the performance of NAIS, some modifications have been suggested in its designing to make to it more effective and farmer- friendly.

Reduction of insurance unit to Village Panchayat level

As of now, the National Agricultural Insurance Scheme is implemented based on "homogeneous area" approach, and the area (insurance unit) at present is the Mandal / Taluk / Block or equivalent unit, in most instances. These are large administrative units with considerable variations in yields and impact of natural calamities. However, under the Indian conditions, implementing a crop insurance scheme at the "individual farm unit level" is beset with problems, such as:

Non-availability of the past records of land surveys, ownerships, tenancy and yields at individual farm level

Small size of farm holdings

Remoteness of hamlets and inaccessibility of some farm-holdings

A large variety of crops varied agro-climatic conditions and package of practices inadequate infrastructure

Threshold / guaranteed yield

Presently, Guaranteed Yield, based on which indemnities are calculated, is the moving average yield of the preceding three years for rice and wheat, and preceding five years for other crops, multiplied by the level of indemnity. The concept does not provide adequate protection to farmers, especially in areas with consecutive adverse seasonal conditions, pulling down the average yield. It is proposed to consider the best 5, out of the preceding 10-years‟ yield.

Extending risk coverage to prevented sowing / planting, in adverse seasonal conditions

The NAIS under the existing mode covers risk only from sowing to harvesting. Many a times sowing / planting is prevented due to adverse seasonal conditions and the farmer loses not only his initial investment, but also the opportunity value of the crop.

Settlement of claims

The processing of claims in NAIS begins only after the harvesting of the crop. Further, claim payments have to wait for the results of Crop Cutting Experiments CCE‟s and also for the release of requisite funds from the central and state governments. Consequently, there is a gap of 8-10 months between the occurrence of loss and actual claim payment.

Lack of Awareness and Accessibility among Farmers

Farmers in hilly and remote areas of India often lack complete information about crop insurance schemes. Due to this, they do not fully understand the terms and conditions, eligibility criteria, registration, and claim processes. As a result, many farmers are unable to take advantage of these schemes.

High Premium Burden for Small Farmers

For small farmers with fragmented landholdings, the premium cost of crop insurance becomes a significant financial burden. This prevents many farmers from participating in the insurance schemes.

Challenges in Crop Damage Assessment and Compensation

Accurately assessing crop damage caused by natural disasters is highly challenging. This leads to disputes over claim amounts and inconsistencies in the compensation received by different farmers. Such issues reduce farmers' trust in the crop insurance system.

Conclusions and Recommendations

This research reveals that the number of farmers insured has been increasing steadily across all crop insurance schemes. Similarly, there has been a rise in the number of farmers benefiting from these schemes, along with an increase in premium collection. However, in certain years, a decline in these figures has also been observed. Crop insurance is important for economic security in agriculture, but challenges remain in its effective implementation. Strengthening governance, technology adoption, and policy reforms can increase its effectiveness and reach. To achieve long-term success in crop insurance, it is essential to develop a farmer-centric insurance model that reduces administrative hurdles and encourages maximum farmer participation. Incorporating innovative financial mechanisms such as parametric insurance models and block chain-based claim settlements can enhance transparency and efficiency in the system. Additionally, public-private partnerships should be promoted in crop insurance policies to bring in greater expertise, investment, and efficiency. By adopting an integrated and strategic approach that includes policy reforms, technology adoption, and farmer education, India can build a robust crop insurance system. This will effectively mitigate agricultural risks and provide financial security to farmers, protecting them from economic uncertainties.

Agriculture in India is often impacted by natural disasters such as droughts, floods, cyclones, storms, landslides and earthquakes. The susceptibility of farming to these events is intensified by outbreaks of disease and human-caused catastrophes like fires, sale of counterfeit seeds, fertilizers and pesticides, and price crashes. All these occurrences severely affect farmers through loss of production and income and are beyond their control. With the increasing commercialization of agriculture, the extent of loss from adverse events is rising. Agricultural insurance is one-way farmers can stabilize farm income and investment and gain protection from disastrous effects of losses stemming from natural hazards or low market prices.

References

- Kumar, D., & Phougat, S. (2021). Evolution of crop insurance schemes in India. *Turkish Online Journal of Qualitative Inquiry*, 12(10), 1339–1347.
- Kalimuthu, M., & Priyanka, G. (2023). Analysis of crop insurance scheme with special

reference to Coimbatore City. *EPRA International Journal of Environmental Economics, Commerce and Educational Management*, *10*(6). https://doi.org/10.36713/epra13467

- Santhoshkumar M., & Srinivasan An *Economic Study on Impact of Crop insurance scheme on agriculture, International Journal For Multidisciplinary Research, 8(4).* https://doi.org/10.36948/ijfmr.2026. v08i04.86785
- Raju, S., & Venkateshwarlu, K. (2015). Agricultural insurance in India – Issues and challenges. *International Journal of Research in Finance and Marketing*, 5(9), 90–98. http://www.euroasiapub.org
- Lokesha, M. N. (2019). *Agricultural insurance for agricultural development in India: Issues and experience*. International Journal of Novel Research and Development, 4(6), 1–10. https://www.ijnrd.org/IJNRD1906001
- Giramkar, J. M., & Mangade, G. B. (2025). *Prospects and challenges of crop insurance in India: An analytical study*. International Journal for Multidisciplinary Research, Special Issue, 256–263. R. V. Belose Education Foundation Dapoli & N. K. Varadkar Arts, R.V. Belose Commerce College. https://www.ijfmr.com
- Dr M. Santhoshkumar, & Srinivasan *Prospects and Challenges of Crop Insurance in India: An Analytical Study*, International Research Journal of Economics and Management Studies, *Doi:10.56472/25835238/IRJEMS-V5I8P111*.
- Sandeep Kaur , HemRaj , Harpreet Singh & Vijay Kumar Chattu (2021). “Crop Insurance Policies in India: An Empirical Analysis of Pradhan Mantri Fasal Bima Yojana”.Risks Journal(2021) 9, 191.
- Shashi Kiran A. S. & K.B. Umesh (2012) “Crop Insurance- Strategy to minimize risk in Agriculture. “International Association of Agricultural Economists (IAAE) Triennial Conference, Foz do Iguaçu, Brazil, 18-24
- https://en.wikipedia.org/wiki/Agricultural_insurance_in_India
- https://krishijagran.com/wiki/crop-insurance-schemes-in-india-need-importance-and-benefits-to-farmers/

■ ■ ■