

“Crop Insurance and its role in Indian Agriculture”

Pallavi Dabhade¹, Gauri Karle¹, Shubham Lagad¹, Dr. Ritesh Watharkar²

1 Research scholar 2 Assistant Professor

Department of Agri and Food Business Management

MIT College of Management, MIT ADT University, Pune.

Abstract: -

In India, an agrarian nation where one-third of the population depends on agriculture either directly or indirectly, there are 116 million farm holdings spanning 163 million hectares, of which 80 percent of the producer population is made up of small and marginal farmers (those with holdings of two hectares or less). Farmers confront a variety of risks because farming is by its very nature a risky enterprise. Sixty-five percent of Indian

farmers rely on rain-fed irrigation, which covers about sixty percent of the nation's net planted land. The amount and distribution of rainfall during the Monsoon Season, which can be unpredictable at times, determines crop growth and yield realization. The pattern of rainfall also has an impact on irrigated crops. In India, over two thirds of the arable land is susceptible to drought to varying degrees. This increases the operating risk involved in growing various crops. Each year, these disasters affect 12 million hectares of crop land on average, which has a significant negative influence on crop yields and overall agricultural productivity.

Keywords: - Crop insurance, Indian agriculture, climate risks, Pradhan Mantri Fasal Bima Yojana, Weather-Based Crop Insurance Scheme

Introduction:-

In the Global Hunger Index 2020 study, India is ranked 94th out of 107 countries and is home to more than one-third of all undernourished children globally (Global Hunger Index 2020). Agriculture is a risky industry that has a direct impact on farmers' income levels due to production instability and market risks (Gulati et al. 2018). 58 percent of Indians are dependent on agriculture, which is riskier due to its prevalence of rainfed agriculture (India Brand Equity Foundation (IBEF) 2021).

Since independence, efforts have been made both at the central- as well as state-level to introduce a crop insurance scheme for Indian farmers. The first crop insurance pilot programme was started in 1972 with little coverage. In 1978, it was replaced by the Pilot The United Nations Committee on World Food Security defines food security as ensuring that everyone has access to enough safe, nourishing food that always satisfies their dietary needs and food

choices for an active and healthy life on a physical, social, and economic level (IFPRI 2021). Crop insurance is one tool that farmers can use to protect themselves from unstable revenue. Scheme for Crop Insurance. Based on the local strategy, the Comprehensive Crop Insurance Scheme, the first national crop insurance program, was launched in 1985.1. The program was superseded in 1999 by the National Agriculture Insurance Scheme, which was subsequently renamed the Modified National Agriculture Insurance Scheme.

The origins of crop insurance in history

Although crop insurance has been around for a very long time—dating back to ancient civilizations—modern crop insurance systems have changed during the last hundred years. Here is a quick overview of crop insurance's past:

1. **Ancient Origins:** The idea of risk sharing in agriculture has its roots in the unofficial risk-sharing systems used by ancient societies like the Chinese and Babylonians. These arrangements, meanwhile, were not official insurance plans in the modern sense.

2. **Early Modern Europe:** European nations started experimenting with early types of crop insurance in the 18th and 19th centuries. Limited coverage was offered by certain governments and mutual help organizations for crop losses brought on by hail or other disasters. These initial initiatives set the stage for later, more extensive systems.

3. **United States, late 19th century:** Agricultural insurance started to become popular in the United States in the late 19th century, mostly as a hail damage protection. In 1867, South Carolina issued the nation's first crop insurance policy, covering grain and cotton. Crop insurance was first introduced infrequently and frequently in specific areas.

4. **The Dust Bowl and the Great Depression of the 1930s:** These events brought attention to the need for more comprehensive agricultural risk management. In order to give American farmers more options for crop insurance, the federal government started to get more involved. In order to promote and oversee crop insurance, the Federal Crop Insurance Corporation (FCIC) was founded in 1938 as a component of the Agricultural Adjustment Act.

5. **Mid-20th Century:** During the mid-20th century, crop insurance schemes kept growing, covering an increasing number of crops and geographical areas. By making crop insurance more widely available and establishing more standardized schemes, the Federal Crop Insurance Act of 1980 represented a critical turning point.

6. **Modern Crop Insurance:** During the latter half of the 20th and the early 21st century, crop insurance in the US expanded in scope. The government began to provide a range of insurance plans to guard against different risks, such as floods, droughts, and changes in crop prices. To oversee these initiatives, the Federal Crop Insurance Corporation collaborates with commercial insurance providers.

Need of crop Insurance:

The majority of impoverished farmers in emerging nations suffer from natural calamities. Additionally, crop insurance guards farmers against crop loss from extreme weather, natural disasters, and changes in agricultural market prices that result in lost revenue. In the event of a calamity, a farmer who toils with his plough will know that he would at least get some compensation.

Crop insurance: What is it?

A risk management instrument called crop insurance is intended to shield farmers and other agricultural producers from monetary losses that may arise from uncontrollable circumstances. By providing compensation

in the event of crop failure or lower yields owing to different factors, it acts as a safety net for farmers. Crop insurance is primarily intended to assist farmers in managing the risks involved in farming, such as inclement weather, natural catastrophes, pests, illnesses, and other unforeseen circumstances.

Types of Crop Insurance:

There are three types of crop insurance:

- **Multiple Peril Crop Insurance:** Offers monetary protection against risks associated with weather-related losses, like floods and droughts.
- **Real Production History:** Insect, wind, and hail damage is covered. covers reduced yield as well and makes up for the discrepancy between the estimate and the **actual Crop Revenue Coverage:** This is dependent on both the overall amount of money made from the crop production and its actual yield. This kind of crop insurance pays the difference if the price of the crop drops.

Covered by Crop Insurance?

Crop insurance covers the following stages of crop loss:

The aforementioned pertains to localized calamities and threats, such as landslides that impact isolated farms within the notified region and hailstorms.

- **Planting, Seeding, and Germination Risk:** Any issues with planting or sowing resulting from insufficient rainfall or unfavorable seasonal circumstances
- **Persistent crop loss:** Complete risk insurance to protect against yield losses from unavoidable hazards including cyclones, typhoons, floods, hailstorms, and dry spells
- **Post-harvest losses:** Up to two weeks following harvesting are covered for losses.

Governmental programs pertaining to crop insurance in India:

An essential part of India's agricultural policy framework is crop insurance. Its

goal is to shield farmers financially from losses brought on by pests, illnesses, and natural disasters. The Indian government conducts a number of programs to encourage and enable crop insurance in partnership with different insurance providers. The following are some of the main government programs pertaining to crop insurance in India:

1. Pradhan Mantri Fasal Bima Yojana (PMFBY):

This is India's premier crop insurance program. It took the place of the National Agricultural Insurance Scheme (NAIS) and the Modified National Agricultural Insurance Scheme (MNAIS), and it was introduced in 2016. Farmers can get full coverage from PMFBY against yield losses resulting from a range of natural disasters, such as floods, cyclones, droughts, and more. Post-harvest losses are also covered. Farmers only have to pay a small charge; the government covers the rest. ‘

Objectives:- The Pradhan Mantri Fasal Bima Yojana (PMFBY) seeks to assist sustainable production in the agricultural sector by:

- Offering financial assistance to farmers who experience crop loss or damage as a result of unanticipated circumstances.
- Encouraging farmers to use cutting-edge, contemporary agricultural techniques;
- Stabilizing farmers' income to ensure their continued farming
- Ensuring the flow of financing to the agriculture sector, which will safeguard farmers from production risks while also promoting growth and competitiveness, crop diversity, and food security.

Silent features of scheme:

1. Offers complete insurance protection against crop loss due to unavoidable natural hazards, assisting in stabilizing farmers' income and motivating them to use cutting-edge techniques.
2. Enhanced agricultural cycle risk coverage, from pre-sowing to post-harvest loss
3. Using an area-based strategy to settle

claims for extensive harm. Village Panchayat forcrops is now the only Notified Insurance unit.

4. Farmers must pay an actuarial/bidder premium, with a uniform maximum of just 2.5%, 1.5%, and 5% for all Kharif crops, Rabi crops, and commercial/horticultural crops, respectively. The Central and State Governments split the premium over and beyond these caps 50:50, with the exception of the Northeastern Region, where the split is 90:10.

5. The Center and the State give a subsidy equivalent to the difference between the premium and the rate of insurance charges payable by farmers.

6. Equal seasonality control and sum insured for farmers who are not loanees.

7. Elimination of the premium cap clause that reduced the Sum Insured and made it easier for farmers to file a claim against the entire Sum Insured without any reduction.

8. Evaluation and settlement of claims at the individual farm level for localized disasters such as hailstorms, landslides, flooding, cloud bursts, and natural fires; and post-harvest losses from cyclones, cyclonic/unseasonal rains, and hailstorms for the crops that were left in the field for up to 14 days across the nation.

1. The Restructured Weather-Based Crop Insurance Scheme (RWBCIS): The purpose of RWBCIS is to shield farmers financially from unfavorable weather conditions that may result in crop loss. It is a weather-based insurance scheme that is localized and bases payouts on meteorological data. Farmers have a selection of options for weather-based insurance.

OBJECTIVE OF THE SCHEME:The goal of the Restructured Weather Based Crop Insurance Scheme (RWBCIS) is to

lessen the financial loss that insured farmers may experience due to crop loss that is predicted to occur from unfavorable weather conditions, such as high temperatures, high winds, high humidity, and rainfall. The weather is used as a "proxy" for crop yields in the restructured WBCIS to compensate cultivators for crop losses that are believed to have occurred. Using the weather triggers, payout structures are built to the amount of losses assessed to have occurred.

CROPS & AREAS COVERED:

With the exception of Alappuzha and Pathanamthitta, all districts are implementing the restructured WBCIS. For the Kharif 2019 season, the following crops have been notified: rice, banana, pepper, ginger, turmeric, pineapple, sugarcane, cardamom, arecanut, and nutmeg; for the Rabi 2019–20 season, the following crops have been notified: rice, banana, pineapple, sugarcane, cashew, mango, potato, cabbage, carrot, garlic, beans, yard long bean, snake gourd, and bitter gourd.

1. National agricultural insurance scheme (nais):

The country's previous Comprehensive Crop Insurance Scheme (CCIS) was replaced with the National Agricultural Insurance Scheme (NAIS) in Rabi 1999–2000, which aims to expand coverage of farmers, crops, and risk commitment. Protecting farmers from agricultural losses caused by natural disasters like drought, flood, hailstorm, cyclone, pests, and diseases was the primary goal of the scheme. The Agriculture Insurance Company of India Ltd. (AIC) carried out the Scheme's implementation.

NAIS was supposed to end when the National Crop Insurance Programme

(NCIP) was implemented four times, starting in Rabi in 2013–14. However, on the request of several States, it was extended in 2013–14 and 2014–15. Key Aspects of the National Agricultural Insurance Program (NAIS) For notified crops, loanee farmers are required to be covered in notified areas; non-loanee farmers are not required to participate in the program. includes all annual commercial and horticultural crops, oil seeds, and food crops (cereals, millets, and pulses) for which sufficient historical yield data is available. For food and oil seeds, the administered premium rates, which vary from 1.5% to 3.5% for the standard sum insured and indemnity level, are assessed. Small and marginal farmers are eligible for a 10% subsidy. The federal government and state governments split claims that exceed 100% of premiums collected for food crops and oil seeds, bank service charges, and 20% of administrative costs 50/50.

Coconut Palm Insurance Scheme:

Through insurance coverage, this system shields coconut growers' revenue from losses brought on by illnesses and natural disasters like cyclones.

Objectives of scheme:

1. A comprehensive coconut life insurance plan developed in partnership with the Coconut Development Board.
 2. Insurance based on specified hazards that cause the coconut palm to die or sustain irreversible harm
 3. The age of the coconut palm and its discounted future worth determine the maximum liability.
- India's most popular plantation crop, coconut, is primarily planted around the coast. There is a purpose for every part of the coconut, including the water, oil,

copra, uncooked kernel, shell, wood, and leaves. With a cultivated area of around 2 million hectares and an annual yield of over 12 billion nuts, coconuts have a leading position. In addition to pests and illnesses, coconut is susceptible to meteorological conditions, including cyclone winds, gales, etc. A means of effectively assisting growers who may be negatively impacted by uncontrollable natural events, pests and illnesses, etc. is the Coconut Palm Insurance Scheme.

Coverage: Damage or losses to coconut palm and/or nut production resulting from unavoidable natural factors will be covered by the insurance policy. Only Section 1—the loss of coconut palm owing to non-preventable factors—is covered for the 2011–12 fiscal year. Nut yield insurance protects the policyholder from the risk of reduced nut production or yield due to uncontrollable natural events like natural fires and lightning, storms, hailstorms, cyclones, typhoons, tempests, hurricanes, tornadoes, floods, inundations, landslides, and pests and diseases, among other things.

Insurance of Coconut Palm: From the fourth to the sixtyth year of the insurance, the insured is paid if one palm or tree in the insured plantation is completely destroyed. A three-month waiting period from the transplant date is applicable during the first year. The evaluation of claims and insurance coverage will be done tree-by-tree. The insurance protects against a variety of natural disasters, including earthquakes, lightning, storms, hail, cyclones, typhoons, tornadoes, heavy rains, floods, inundations, severe droughts, riots, strikes, and pest and disease outbreaks.

Sum Insured: For section 1 (nut yield), the sum insured varies from block to block and is based on the block's guaranteed yield multiplied by the average nut price in the relevant district for the prior year. In Section 2, the amount of insurance is determined by calculating the average input cost of the plantation based on its age.

Premium: The premium is calculated based on the palm's age and the historical variability in the block level nut yield.

2) Modified National Agricultural Insurance Scheme (MNAIS): In certain states, MNAIS is still in use, despite PMFBY having mostly supplanted it. Farmers are protected by it against crop losses brought on by natural disasters. A Joint Group was established by the Government of India to examine the current crop insurance programs in an effort to enhance the program even more and make it simpler and more farmer-friendly. An outline for the Modified National Agricultural Insurance Scheme (MNAIS) was created based on the Joint Group's recommendations as well as the opinions and input of numerous stakeholders. The MNAIS will be tested in 50 districts over the remaining months of the 11th Plan, starting in Rabi 2010–2011. Here are the main advancements in MNAIS (compared to NAIS):

Actuarial premium with a premium subsidy of up to 75% for all farmers; • The insurance company bears full claim liability, with the Central and State Governments sharing the upfront premium subsidy 50:50.

- For main crops, the insurance unit area was lowered to the village or village panchayat level.
- Compensation for losses incurred after harvest as a result of a cyclone and for

averting planting or sowing risks (coastal areas);

- As an instant reprieve for farmers, on account payments up to 25% of expected claims;
- The program is mandatory for loanee farmers and optional for non-loanee farmers;
- It provides a more sophisticated basis for calculating threshold yield and an increase in the minimum indemnity level from 60% to 70%;
- It is consistent with seasonality discipline for both types of farmers;

The involvement of insurers from the private sector in fostering a competitive atmosphere for crop insurance.

- NAIS is removed from the area(s) or crop(s) where MNAIS is implemented;
- A nationwide catastrophic fund is established, with contributions made equally by the federal and state governments, to protect insurance companies in the event that the premium to claim ratio surpasses 1:5 nationally and that adequate reinsurance cover is not obtained at competitive rates.

National Crop Insurance Program (NCIP): Farmers that grow commercial crops can get insurance coverage from NCIP against crop loss or damage that occurs during cultivation or storage. The National Crop Insurance Programme (NCIP), a redesigned Central Sector scheme, was launched in Rabi 2013–14 with the goal of improving farmer friendliness of the crop insurance schemes. Under this effort, the MNAIS, WBCIS, and CPIS that were already in place were combined with a number of enhancements and modifications for nationwide implementation. Nonetheless, certain States have been permitted to deploy NAIS in 2013–14 and 2014–15 based on requests obtained.

By the Twelfth Plan's terminal year of 2016–17, the NCIP's coverage percentages for farmers and area insured are expected

to increase to 50% from the current levels of roughly 25% and 20%, respectively. It is anticipated that 25% of coconut growers will be covered by CPIS in 2013–14, and that percentage will rise by 5% annually in the remaining years of the Twelfth Five Year Plan.

Salient Features of the National Crop Insurance Programme (NCIP) :

The loanee farmers are required to implement.

As opposed to the three indemnification levels under MNAIS of 70, 80, and 90 percent, two levels of 80 and 90 percent would be offered.

• Under WBCIS, horticultural crops are eligible for add-on/index plus goods to offset losses resulting from hailstorm and cloudburst hazards.

Following the successful installation of WBCIS, 5000 AWS will be established nationwide using the Private Public Participation (PPP) model.

Pilots for the augmentation of yield using CCEs by the application of contemporary technologies like as satellite imagery and remote sensing technology (RST).

The minimum number of healthy palms a farmer needed to be eligible for insurance has been lowered to five under CPIS. Enhanced Amount Covered by CPIS. Under CPIS9, the loss notification period has been extended from seven to fifteen days.

Watershed Development Fund: Farmers who have profited from watershed development initiatives are covered by insurance through the Watershed Development Fund. It addresses the dangers connected to practices that conserve water and soil.

Agricultural Insurance Company of India (AIC): AIC, an insurance firm that is controlled by the government, is crucial

to the execution of crop insurance programs in India. It works with a number of insurance companies in the public and private sectors to provide farmers with insurance products.

• On December 20, 2002, it was formed under the Indian Companies Act of 1956. The firm is governed administratively by the Ministry of Finance and has an authorized capital of Rs. 1500 crore and paid-up share capital of Rs. 200 crore.

• It is the largest crop insurance provider globally, covering 20 million farmers.

• Six Public Sector Financial Institutions—General Insurance Corporation, New India Assurance Company, Oriental Insurance Company, National Insurance Company, United India Insurance Company, and NABARD—promote it; its headquarters are in New Delhi, India.

• Farmers are insured against financial losses resulting from crop failure (specified in insurance scheme) caused by pests, illnesses, and natural disasters by AIC, which offers weather- and yield-based crop insurance schemes in more than 500 districts of India.

These programs are meant to guarantee the agricultural sector's stability and sustainability while also lessening the financial strain on Indian farmers in the event of crop losses.

List of Crop Insurance Companies in India

Various General Insurance companies offer Crop Insurance in India, namely:

- Bajaj Allianz General Insurance Company Ltd.
- HDFC ERGO General Insurance Company
- Reliance General Insurance Company

- State Bank of India
- Universal Sompo General Insurance Company Ltd.
- Agricultural Insurance company of India
- IFFCO-Tokio General Insurance Company
- ICICI Lombard General Insurance Company
- Future Generali India Insurance Company Limited
- Cholamandalam MS General Insurance Company Ltd

Scope of crop Insurance in

India: India has a large crop insurance market because of its strong agricultural economy and farmers' susceptibility to a wide range of risks. The purpose of crop insurance programs is to lessen the financial burden of crop failures and other hazards on Indian farmers. This is a summary of crop insurance's reach in India:

Huge Agricultural Sector: Millions of farmers in India work to cultivate a broad variety of crops, from horticultural to food grains. The country's agricultural sector is both large and diverse. The purpose of crop insurance is to meet the demands of this large farming population.

Income Stabilization: Farmers that purchase crop insurance have a safety net that helps them recoup from financial losses incurred when their crops fail. Reducing poverty and ensuring food security depend on this stability.

Government Support: Through a number of initiatives, including the Pradhan Mantri Fasal Bima Yojana (PMFBY), the Indian

government has been aggressively promoting crop insurance. A larger percentage of farmers can obtain crop insurance thanks to government assistance with subsidies, premium sharing, and policy implementation.

Technology Integration: The effectiveness of crop insurance has been improved by the use of technology, such as satellite images, mobile apps, and remote sensing. It has sped up the claim settlement process and increased the accuracy of estimating crop damages.

Risk Diversification: By covering losses from a range of hazards, such as pests, illnesses, natural catastrophes, and changes in market prices, crop insurance helps farmers diversify their risk.

Sustainability: Ensuring farmers have a safety net in place promotes risk management and sustainable farming methods. For Indian agriculture to be viable in the long run, this is essential.

Financial Inclusion: By incorporating crop insurance into more comprehensive financial inclusion programs, farmers will have access to credit, investment opportunities, and financial services.

Partnerships: Working together with other stakeholders and private insurance providers can assist crop insurance programs reach a wider audience and have a greater impact.

Adaptation to Climate Change: As weather patterns continue to be impacted by climate change, crop insurance will play a bigger role in helping people meet new challenges and reduce risk.

Data Analytics: By incorporating data analytics, insurers may improve risk assessment, premium setting, and crop loss prediction, which will ultimately result in more efficient and adaptable insurance solutions.

CONCLUSIONS:-

Because it stabilizes food supply, manages market risks, and offers financial protection, crop insurance is essential to

Indian agriculture. To improve crop insurance programs' efficacy, efficiency, and reach, more work needs to be done. Crop insurance systems can be improved by implementing policy recommendations that emphasize data management, creative partnerships, institutional coordination, and awareness-raising. Crop insurance can, in general, provide a substantial contribution to food security, agricultural stability, and the welfare of Indian farmers. Crop insurance can continue to flourish and play a crucial role in protecting farmers' lives and guaranteeing the sustainable growth of Indian agriculture by tackling the issues that have been identified, welcoming the future, and putting evidence-based policy suggestions into practice.

India Development Gateway, (2005), www.indg.in/agriculture.

<https://krishijagran.com/crop-insurance-schemes-in-india-need-importance-and-benefits-to-farmers/>

<https://www.researchtrend.net/bfij/pdf/Crop-Insurance-and-its-Role-in-Indian-Agriculture-A-Comprehensive-Review-Shruti-Mishra-118.pdf>

https://www.researchgate.net/publication/346397869_Crop_Insurance_in_India_A_Review_of_Pradhan_Mantri_Fasal_Bima_Yojana_PM_FBY

References

https://in.images.search.yahoo.com/search/images;_ylt=AwrPqEbGzEVmQAQASZy7HAx.;_ylu=Y29sbwNzZzMEcG9zAzEEdnRpZAMEc2VjA3BpdnM-?p=current+dada+of+crop+insurance+used+in+india&fr2=piv-web&type=E211IN826G91449&fr=mcafee#id=13&iurl=https%3A%2F%2Fimage.slidesharecdn.com%2Fpaggarwalcrop-insurance-india-150129021748-conversion-gate01%2F95%2Fcrop-insurance-in-india-reaching-the-unreached-2-638.jpg%3Fcb%3D1422498226&action=click

<https://in.search.yahoo.com/search?fr=mcafee&type=E211IN826G91449&p=need+of+crop+insurance+in+indian+agriculture>

Dey, K. and Maitra, D. Agriculture Insurance in India, Economic and Political Weekly, Vol. 52 (52), (2017) pp 88-96. Available at: https://www.epw.in/system/files/pdf./2017_52/52/SA_LII_52_301217_RRA_Kushankur_Dey.pdf.