

A STUDY ON AGRICULTURE INSURANCE WITH REFERENCE TO NABARD

SWAPNIL MISHRA¹, SWAPNA MYAKALA², DR.K. VENKATA SUBBAIAH³

1. Student of Department Of MBA & DRK College of Engineering and Technology, Hyderabad
2. Associate Professor of MBA & DRK College of Engineering and Technology, Hyderabad
3. Professor of MBA & DRK College of Engineering and Technology, Hyderabad

ABSTRACT

Crop insurance is crucial for mitigating risks associated with agricultural productivity and farm revenue in India. To evaluate the effectiveness of the National Agricultural Insurance Scheme (NAIS), this article assessed its functional aspects and performance, while also providing recommendations for enhancements. Currently, the coverage provided by NAIS is insufficient in terms of crop acreage, farmer population, and agricultural production value. To make the crop insurance program a more impactful tool in managing agricultural risks, it is necessary to increase the coverage by at least three to four times. This can be achieved by expanding and improving the insurance plan itself. However, implementing these recommended improvements will have financial implications and affect the insurance procedures involved. Therefore, the government must take additional measures to establish appropriate procedures and offer financial support for farm insurance. Additionally, extending assistance to private sector insurers would contribute to the sustainability of insurance programs and facilitate the expansion of insurance coverage. The research also suggests setting realistic targets for various general insurance companies to provide coverage for farm insurance, initially aligning these targets with the contribution of agriculture to the national revenue.

INTRODUCTION

Safeguarding farmers against the uncertainties of agriculture has always been a key focus of agricultural policy. The National Agriculture Policy (NAP) 2000 recognizes that despite economic and technological advancements, farmers in India continue to face insecurity due to natural disasters and price fluctuations. Severe droughts have further highlighted the impact of such fluctuations, leading to reports of farmer suicides in various regions of the country. Crop insurance is one of the tools utilized in India to protect farmers against agricultural uncertainties, along with measures like calamity relief funds and minimum support prices (MSP) through open market operations.

This research centers around the use of agricultural insurance programs as a means of safeguarding farmers against agricultural uncertainties. In India, crop insurance is funded by the national and state governments, administered by the General Insurance Corporation (GIC), and provided through rural financial institutions, often in conjunction with agricultural loans. With contributions from GIC, the four public sector general insurance companies, and NABARD, the government has established a dedicated agriculture insurance company. While crop yield insurance has been offered through insurance policies, trial programs for crop income insurance are being introduced this year. Additionally, pilot initiatives by commercial insurers and the newly formed government Agriculture Insurance Company have explored offering rainfall insurance as an alternative or complement to government-provided crop insurance. IRDA mandating coverage for the social

and rural sectors may have influenced these initiatives.

NEED FOR THE STUDY

- Plant diseases, in addition to locusts and floods, pose a significant threat to agriculture, leading to crop loss and reduced farmer income.
- Small-scale holdings result in limited surplus for farmers in good years and substantial losses during poor years.
- Farming is a high-risk business, heavily dependent on weather conditions, making farmers, especially smaller ones, hesitant to embrace new methods.

OBJECTIVES OF THE STUDY

1. Provide financial assistance and insurance protection to farmers in the event of natural disasters, pests, and diseases.
2. Promote the adoption of high-quality inputs, advanced technologies, and progressive agricultural techniques among farmers.
3. Ensure the sustainability of agricultural revenues, particularly during periods of calamity.

SCOPE OF THE STUDY

- Assess the price and yield risks associated with different crops at the national and disaggregated levels.
- Evaluate the effectiveness of past and present national crop insurance programs in India.
- Analyze agricultural insurance issues and identify future opportunities in the country.
- Examine the government's role in implementing various agricultural insurance programs.
- Provide recommendations for a successful farm insurance policy in India.

RESEARCH METHODOLOGY

The research employs a case study methodology, utilizing both primary and secondary data. Primary data: Personnel from the finance and accounts departments of relevant organizations were interviewed to gather primary data.

Secondary data: Annual reports and other relevant documents were collected for data analysis.

The collected data was processed and examined using appropriate analytical methods and tools to assess its effectiveness. The research was conducted over a thirty-day period in a prominent company named NABARD.

PROPOSED STATISTICAL TOOLS FOR THE STUDY

Descriptive statistics: Mode, percentages, frequencies, bar graphs, and pie charts Mann-Whitney Test

Correlation Analysis Chi-square Test Ratio Analysis

TOOLS USED IN THE ANALYSIS

- Statistical tools
- Financial tools

RESEARCH GAP

The study covers a period of four years, aiming to fill the existing research gap during this time frame.

LIMITATIONS OF THE STUDY

- Limited availability of farmland in India, posing challenges in the predominantly rural and agricultural economy.
- Dependence on monsoon rainfall for irrigation, even in irrigated regions, leading to income and job instability for farmers focused solely on agricultural production.

LITERATURE REVIEW

The researcher's analysis reveals that the majority of parameters have the expected signs and are statistically significant. However, there is no statistically significant difference found in the demand for crop insurance between full-time farmers, non-irrigated farmers, and livestock owners. By estimating the data, the researcher determines that the price elasticity of demand is higher when considering the liability per planted acre or liability per relative acre, compared to the relative acre equation. This suggests that changes in yield, price options, and the decision to cancel coverage can impact insurance purchasing decisions. The researcher further examines the relationships between loss risk, price elasticity, premium rates, land value, farm operation characteristics, and crop insurance demand. The analysis indicates a significant negative effect of premium risk interaction components on the price elasticity of demand when loss risk increases.

Moreover, the researcher argues that the demand for crop insurance is more elastic in counties with low loss risk compared to counties where farmers typically receive substantial indemnities relative to their premium payments. This implies that increasing premium prices for all producers would raise the overall loss-risk levels among participants, as cancellation rates are higher for low-risk producers compared to high-risk ones. Such a situation could worsen the problem of unfair participant selection and potentially increase the industry's overall loss ratio.

The researcher's empirical investigation demonstrates that land values have a significant influence on insurance demand. Counties with higher levels of leased or rented land exhibit higher participation rates in insurance programs. Additionally, the analysis identifies agricultural operation characteristics, such as farm size and the percentage of farmland managed by corporations, as key factors influencing insurance participation. Larger farmers show a greater inclination to obtain insurance, and both participation and the percentage of farmland managed by corporations increase. The analysis also uncovers skewness in the distribution of loss ratios at the county level, indicating the possibility of adverse selection in current and previous premium rates.

The study conducted by Sakurai and Reardon (1997) extensively examines the need for institutional drought insurance in developing nations, specifically using farm household data from Burkina Faso in the drought-prone zone of the West

African Semi-arid Tropics

THEORETICAL FRAMEWORK

The enactment of the Insurance Regulatory and Development Authority (IRDA) Act in 1999 allowed for increased competition in India's insurance market by allowing new private insurers to enter. In comparison to countries like South Africa, South Korea, Japan, and the UK, which had insurance penetration rates ranging from 11.17% to 16.54%, India had a significantly lower penetration rate of 1.93%, with 0.54% and 1.39% in the non-life and life insurance sectors, respectively.

Given India's agrarian economy, there is a significant market for agricultural and rural insurance. Emerging areas such as weather insurance, rainfall insurance, and cyclone insurance present opportunities for new private insurers and reinsurers to tap into specialized markets. A study by Ahsan et al. (1982) suggests that farm insurance cannot be profitable without government subsidies since the core concept of insurance revolves around risk sharing. Risk spreading and risk pooling are two methods of risk sharing. Risk spreading occurs when individuals with different risk attitudes share the same risk, while risk pooling involves individuals with various risks sharing a common pool. Traditional insurance models involve individuals transferring specific risks to insurance companies, assuming individuals are risk averse and insurers are risk neutral. Pooling benefits arise from the possible reduction in the variance of total loss, leading to premium reductions.

In the Indian context, there is a need for rural and agricultural insurance due to the dependence on the monsoon season and the volatility it brings to production and prices. The unpredictable and uneven distribution of monsoon rains exposes farmers to high levels of risk and uncertainty. Managing risk becomes crucial for farmers, necessitating contingency planning to better handle adverse events. Traditional private agreements within families and villages have been historically used to manage risk, but they may not be effective for yield risk insurance, as yield hazards tend to be localized. Farmers also employ crop and income diversification as a risk management strategy, which can reduce revenue variations. However, overreliance on diversification may hinder economic growth and specialization, affecting national productivity and trade benefits.

COMPANY PROFILE

The Indian government recognized the importance of institutional credit in fostering rural economic growth from the early stages of planning. In response to this, the Reserve Bank of India (RBI) established the Committee to Review the Agriculture Development (CRAFICARD) at the request of the Government of India. The committee, led by a senior member of the Indian government's Planning Commission, was formed on March 30, 1979.

In its interim report issued on November 28, 1979, the committee emphasized the need for a dedicated organizational structure that provides focused attention, strong direction, and clear emphasis on credit-related concerns in rural development. As per the committee's recommendation, the National Bank for Agriculture and Rural Development (NABARD) was established through the passing of Act 61 of 1981 by the Parliament.

On July 12, 1982, NABARD was formed by transferring the agricultural credit functions of RBI and the refinancing responsibilities of the Agricultural Refinance and Development Corporation (ARDC). The late Prime Minister Smt. Indira Gandhi dedicated NABARD to serve the country on November 5, 1982. Over time,

the paid-up capital of NABARD has increased from its initial capital of Rs. 100 crore to Rs. 14,080 crore as of March 31, 2020. The Government of India now owns NABARD entirely due to changes in the share capital composition between the government and RBI.

DATA ANALYSIS AND INTERPRETATION

STATE	LEVEL4	LEVEL5	LEVEL6	LEVEL7
ASSAM	Sub Division	RCIRBLCK	Gram Panchayat	Village
A & N ISLANDS	Tehsil	Gram Panchayat	Village	
ANDHRA	Mandal	SUB Mandal	Panchayat	Village
BIHAR	Sub Division	CIRCLE	Gram Panchayat	Village
CHATTISGARH	TALUK	RCRCLE	PTHLKA	Village
GOA	TALUK	RCRCLE		
GUJARAT	TALUK	RCRCLE	Gram Panchayat	Village
HIMACHAL	Tehsil	SBTHKNC	PTCRCL	Village
HARYANA	Block	Sub Block	Gram Panchayat	Village
JHARKHAND	Block	Gram Panchayat	PWARD	Village
JAMMU &	Block	Tehsil	Panchayat	Village
KARNATAKA	TALUK	HOBOLI	Gram Panchayat	Village
KERALA	TALUK	Block	ZONE	Panchayat
MEGHALAYA	Sub Division	CRDBL	Villages	Village
MAHARASHTRA	TALUK	RCRCLE	Tanagra	Village
			Panchayat	
MANIPUR	Sub Division	CIRCLEAG		
MADHYA	Tehsil	RCRCLE	PTHLKA	Village
MIZORAM	Sub Division	CIRCLEAG	Villages	Village
ODISHA	Tehsil	Block	Gram Panchayat	Village
PASCHIM	Sub Division	Block	Gram Panchayat	Village
PONDICHERRY	Tehsil	Nadya Panchayat	Gram Panchayat	Village
RAJASTHAN	Tehsil	RCRCLE	PTCRCL	Village
SIKKIM	Sub Division	Block	Gram Panchayat	Village
TAMIL NADU	Block	PHIRKA	Gram Panchayat	Village
TRIPURA	Sub Division	Block	Gram Panchayat	Village
TELANGANA	Mandal	SUB Mandal	Panchayat	Village

It took considerable time to reach a consensus among all the states regarding the implementation of a solution. The hierarchy tables facilitate easy retrieval of both parent and child nodes, simplifying data management.

1. Email and SMS Alerts:

The system incorporates SMS and email alerts at every stage of the workflow to ensure timely communication. SMS messages are specifically utilized to provide information to farmers.

2. Integrated Ecosystem:

A comprehensive ecosystem is established, ensuring the reliability, security, and seamless integration of data. To support this project, the Nag-A Data Centre at Shastra Park will be utilized.

3. Quick Service Delivery:

The user-friendly web platform enables farmers and other stakeholders, including banks, cooperatives, and microinsurance agents, to access a wide range of crop insurance e-services. Regardless of their location, users can easily access crop insurance services through our intuitive interface.

4. Location Master:

The creation of a location master for all states, ranging from the state level down to the village, is a challenging task. The variation in levels across states, such as the block followed by the gram panchayat in some states and the block followed by the zone or Holi in others, adds complexity to data acquisition. The initial database is derived from the Agricultural Insurance Corporation (AIC), but it lacks comprehensive coverage as it only includes notified units. Therefore, a data entry module has been developed for states to complete the entire database, excluding units already present. This process is a one-time activity for all states.

FINDINGS

- In 2020, only 22% of the total cropland in the country, which is equivalent to 42.82 million hectares, was covered by crop insurance.
- The coverage varied across states, with higher coverage observed in Gujarat, West Bengal, and Uttar Pradesh, while states like Rajasthan, Chhattisgarh, Odisha, Bihar, and Karnataka had coverage rates of 10% or less.
- The overall awareness of crop insurance among the population is around 38.8%.
- The introduction of crop insurance in India dates back to the launch of the seventh five- year plan in 1985.
- The All-Risk Comprehensive Crop Insurance Scheme (CCIS) was implemented initially to cover all major crop production, which later gave way to the National Agricultural Insurance Scheme in 1999.
- To address the limitations of existing insurance programs, the government introduced the Prime Minister's Fasal Bima Yojana (PMFBY) in January 2019.
- The PMFBY offers farmers highly affordable premium rates, with the government covering the remaining premium to provide full indemnity against crop loss caused by natural disasters.
- Insurance penetration exceeded 3% in FY and is projected to reach 4% in FY17.
- The coverage under the Pradhan Mantri Fasal Bima Yojana was increased from 30% to 40% in the Union

Budget 2020.

SUGGESTIONS

- Agricultural insurance offers a significant advantage in the fight against poverty. When farmers face crop damage caused by natural disasters such as insect attacks, floods, droughts, or other calamities, crop insurance becomes invaluable.
- To encourage more farmers to adopt riskier agricultural production methods, the government should provide subsidies to reduce insurance costs.
- Insurance programs tailored for farmers now offer comprehensive coverage that addresses both personal and property needs.
- There is a need for increased commercialization of agricultural products.
- Crop insurance is typically availed by farmers who are aware of potential crop failures and seek protection.
- Price fluctuations in agricultural products have a significant impact on farmers' income, necessitating stabilization measures.
- Farm managers can leverage the availability of agriculture insurance to safeguard their livestock and crops against unforeseen risks and take advantage of emerging technologies in the market.

CONCLUSIONS & RECOMMENDATIONS

- Despite advancements in irrigation, infrastructure, and communication, the risk associated with agricultural production in the country has increased. The data indicates that the risk to farm income is much higher than the risk to production. State-wise analysis reveals that dependable irrigation systems only reduce risk in specific areas, while states with unreliable irrigation systems continue to face greater risk. Some regions experience challenges of both low productivity and significant production risk. Over time, no technological or other factors have been able to effectively mitigate production risk, especially in states with low productivity. Therefore, it is crucial to develop and expand agricultural output insurance products to address this issue urgently.
- Despite periodic launches of new programs, agricultural insurance has had minimal impact in the country. The coverage in terms of area, number of farmers, and agricultural production value remain low. Indemnity payments based on the area approach often miss affected farmers outside the compensated region, and most programs are not financially sustainable. Increasing crop insurance coverage would significantly increase the government's costs, making the future extension of the program to more farmers unlikely without proper modifications to ensure profitability. To address this, the government must intensify its efforts to establish suitable structures and provide financial assistance for crop insurance. Supporting private sector insurers would also help expand insurance coverage and improve the profitability of insurance plans over time.
- To enhance insurance accessibility, the unit area of insurance could be reduced to the village panchayat level, integrating rural areas and communication networks more effectively. Insurance products for



rural regions should have a simple design and presentation for easier understanding. The private sector

has a keen interest in investing in the general insurance industry, and this opportunity can be utilized to allocate a portion of the goal to different general insurance providers offering agricultural coverage. Initially, this goal could be set as a proportion of national revenue derived from agriculture. The success of various developmental programs and the management of agricultural insurance programs rely on effective governance.

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