

AGRICULTURAL INSURANCE IN INDIA : CHALLENGES AND A WAY FORWARD

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Abstract-

India is land of agriculture and Farmers of India is considered to be backbone of Indian Economy. Farmers are frequently exposed to peculiarities of weather which adversely affects on their agricultural production and farm incomes. One of the most effective mechanisms to mitigate agricultural risks emanating from natural calamities is adoption of a robust insurance system. Even though agricultural insurance has been there in the country from last several decades yet it has been snowed under several problems such as lack of transparency, insufficiency in mobile and satellite technology and non-payment/delayed payment to farmers. Therefore, it would be important to restructure its operation by developing an institutional mechanism that can bring greater transparency and effective implementation, particularly in terms of quick and accurate compensation to farmers for the damages incurred.

This chapter deals with origin of agricultural insurance in India, assesses various agricultural insurance schemes launched in the country from time to time and the coverage provided by them and issues and problems faced in implementing agricultural insurance in the country.

Keywords- agriculture, insurance, risk, natural calamities, schemes

1. INTRODUCTION

India has got primarily agrarian population. Around two third populations in India is depended on agriculture for their livelihood. Agriculture is the way of life, tradition,

which, for centuries has shaped thought, the outlook, the culture and economic life of Indians. Agriculture therefore, is and will be central at all strategies planned for socioeconomic development of the country. Rapid growth in agriculture not only achieved self reliance but also ensured food security as to brings equity in distribution of income and wealth which resulting in rapid reduction of poverty. In India's GDP 15.87%¹ contribution is of Agriculture and associated sector and economic contribution was more than the world's average (6.4%)². Approximately 70 percent of its rural households still depend on agriculture and associated sectors for their livelihood³. India became self-sufficient in food grain production with the help of modern technologies; however the incomes of the farmers have not improved much and is unstable because of natural calamities and price fluctuations. Farmers primarily face yield risk due to weather variability. In the absence of insurance mechanisms poor farmers and landless agricultural laborers are vulnerable who have extremely limited means and lack of resources. Therefore, agricultural insurance is needed to address the issue of yield risk in the farm sector.

2. AGRICULTURAL INSURANCE AND ITS TYPES

Agricultural insurance is a type of insurance policy purchased by farmers or agricultural producers, and subsidized by government, to protect against the loss of their crops or agricultural produce due to natural disasters such as drought, floods, cyclone, storm, landslide, earthquake etc.

Agriculture insurance is a mean which protects the cultivators against financial loss on account of anticipated crop-loss practically due to all natural causes beyond their control. The sum insured possibly the total expenditure or more than that or a part of expected income from crops for which premium is paid. The indemnity or claims payable against the paid out of expenses made is payable on the basis of shortfall in average yield from the guaranteed yield or threshold yield. The claims are paid after the loss in yield is ascertained. The basic principles prior to agriculture insurance is that the

loss incurred is shared by many people in an area or loss occurred in a particular season or bad times are compensated from the resources accumulated in good years.

Agriculture insurance provides two major benefits, as ensuring a reliable level of cash flow and allowing more elasticity in the marketing plan. With some level of production insured, the crop could be forward-priced with more certainty, generating much more probable level of income. The government supports by premium subsidies for most of the crop insurance policies. Subsidies tend to provide more advantage to those producers who invest in higher levels of coverage. Agriculture insurance can be presented through government or private insurance companies. Agricultural insurance can be divided into three parts on the basis of nature of agriculture and its allied business which is as follows.

A. Animal Agricultural Insurance:

Animal agricultural insurance or popularly called as Livestock insurance is designed for the farmers to protect from financial loss due to death of livestock, which is one of the most valued possessions of the farming community. Farm animals include fish, birds, and other livestock. Animal agricultural insurance protects them from accidents, disease outbreaks, and natural disasters such as floods, hail, and drought.

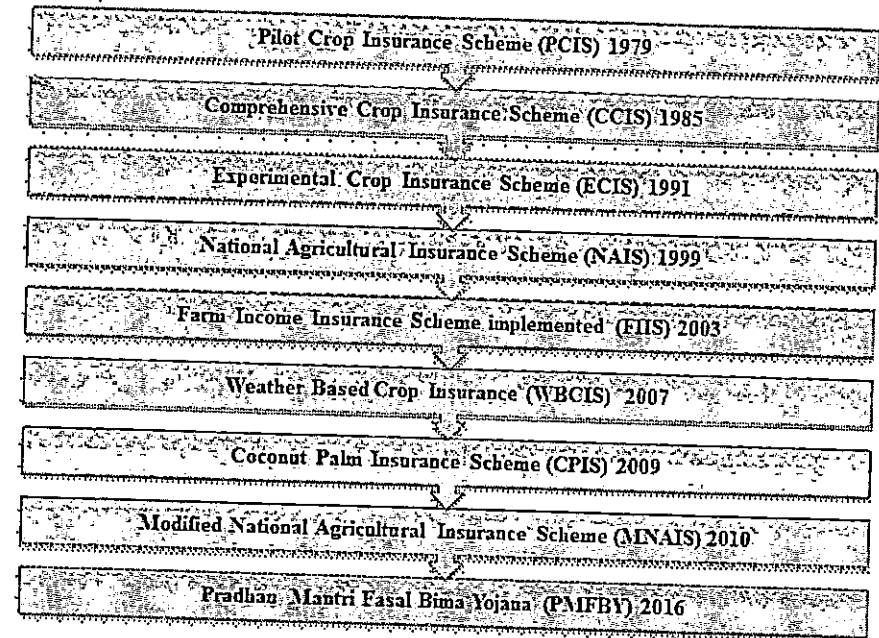
B. Crop Insurance:

Crop Insurance compensates the farmers or cultivators in the event of the loss of crops through natural disasters like flood, hail, and drought. It also compensates for a loss of revenue resulting from a decline in the prices of agricultural commodities. It can be further classified into crop yield insurance, and crop revenue insurance.

C. Farm Equipment/ Property Insurance:

This insurance policy is available for cultivators who involved in the processing and packaging of agricultural produce. It provides cover for equipment and properties used in the farm business.

3. EVOLUTION AND GROWTH OF AGRICULTURAL INSURANCE



Agricultural sector in India is mostly depends on monsoons. Price/ yield instability causes due to unpredictable and uneven monsoon rain distribution and therefore farmers are often exposes to risk and uncertainty. This risk allocation is always been a most important on the part of decision making of farmers in the situation where there is high risk and uncertainty of rain fed agriculture. Therefore it becomes necessary on the part of farmers to make provisional plans which will help to improve the handling of risk. Considering all these agro-problems, a risk mitigating tool "Agriculture Insurance" is launched. It helps in stabilization of farm production and farmers income; in best allocation and utilization of resources in the production process. Agriculture insurance has assumed significance with large scale damage caused due to natural calamities including pest attacks, crop diseases and vagaries of weather. The objective is to provide

insurance coverage and financial support to the farmers in uncertain loss event as a result of natural calamities, pests & diseases.

A. Pre-Independence period-

Agriculture insurance in India has always been in developing form pre and post independence and there have been many intermittent efforts to ensure protection of the farmers against losses caused through natural calamities. In 1915, Shri J.S.Chakravarthi from State of Mysore, had proposed a rain insurance scheme for the farmers for drought. This scheme was based on area approach. In 1920, he also published a book titled "Agricultural Insurance: practical scheme suited to Indian conditions".

B. Post-Independence period –

Crop insurance increasingly started to reveal more often after independence. Dr. Rajendra Prasad, Minister of Food and Agriculture then gave promise to farmers that the government would examine the crop insurance. He also assured to include cattle insurance as to give the benefit to the farmers to mitigate risk in case of natural calamities. A special study by Ministry was commissioned for this purpose in 1948-49. In October 1965, Indian Government decided to introduce a crop insurance bill and a model scheme of crop insurance. In 1970, the draft bill and model scheme was stated to a commission under the supervision of Dr. Dharma Narain.

The General insurance corporation (GIC) introduced the first crop insurance scheme in 1972, based on individual basis for cotton (H-4) in Gujarat state. Later it was extended to Andhra Pradesh, Karnatka, Maharashtra, Tamil Nadu and West Bengal. The crops covered under the scheme were cotton, wheat, groundnut and potato. This scheme continued till 1978-79. Later on, various insurance schemes were announced and implemented by the Government which have been analyzed in brief below;

a. Pilot Crop Insurance Scheme (PCIS) 1979

This scheme was based on recommendations made by Prof. V.M. Dandekar in 1979. It was based on Area Yield approach or "Homogeneous Area approach" and was first started in three states i.e. Gujarat, Tamil Nadu and West Bengal for Kharif crops on pilot basis. The basic unit of insurance was homogeneous area rather than an individual approach. The premium and indemnity rates for the notified crops were uniform for all insured farmers irrespective of their actual yield. The agriculture insurance scheme was multi-peril in nature as it covered almost all the natural risks except war and nuclear risks.

Since agriculture insurance was linked to crop loans, a large number of holding were is small and marginal farm categories and because of their poor access to institutional credit, they could not participate in the crop insurance scheme. Major commercial crops like sugarcane and cotton were not covered under this scheme.

b. Comprehensive Crop Insurance Scheme (CCIS) 1985 –

Based on the experience of the scheme, a Comprehensive Crop Insurance Scheme (CCIS) was evolved and implemented in 1985. With an aim To provide a measure of financial support to farmers in the event of crop failure due to drought and floods, To restore credit eligibility of farmers after a crop failure for the next season and To support and stimulate production of cereals, pulses and oilseeds this scheme was started. Under the CCIS which was in implementation till 1999, the total number of farmers covered were 7.63 crores, total amount of claim paid being Rs. 2303 crores. CCIS was based on area approach considering block as a unit which covered a large geographical area. There were instances where crop losses happened in some villages and farmers did not get any benefit. This made farmers disinterested and decreased participation in CCIS⁴. CCIS covered only loanee farmer with sum insured

for crop loan and that, in limit to Rs. 10000. May be, this amount did not cover the entire expenditure of crop production. It was observed that farmers take out loan in the name of insured crops and invest it in the production of other crops. As non-borrowers cannot get such coverage a vast majority was left-out. Premium rates were uniform for the whole country; there were no different rates of premium for low risk and high risk areas⁵. Cotton was left out from insurance coverage even though it is one of the most grown cash crop throughout the country⁶.

c. Experimental Crop Insurance Scheme (ECIS) 1991-

A new scheme ECIS was introduced during Rabi 1997-98 season to cover even those small and marginal farmers who did not borrow from institutional sources. This scheme was started by The General Insurance Corporation of India with Ministry of Finance in India. This ECIS was implemented in 14 districts of seven states⁷ and Number of farmers covered under ECIS was 4.78 lakh and total sum insured was Rs. 172 crore. Total premium collected was Rs. 2.86 crore with a claim paid out Rs. 39.78 crore. This scheme was discontinued after one season.

d. National Agricultural Insurance Scheme (NAIS) 1999 –

The Government launched the National Agricultural Insurance Scheme (NAIS) on June 22, 1999, in order to expand its coverage in terms of farmers, crops and forms of risks. The scheme is implemented in 21 States and 2 Union Territories covering food grains, oil seeds, annual commercial / horticulture crops for both loanee and non-loanee farmers from the beginning. This scheme was compulsory for the farmers who obtained a loan from institutional sources and it was optional for other farmers. The main flaws of the NAIS were the scheme was financially not viable, compulsory for loanee farmers, no mechanism to prevent adverse selection, arbitrary premiums, and estimation of loss based on area approach⁸.

e. Farm Income Insurance Scheme implemented (FIIS) 2003-

In 2003-04 Farm Income Insurance Scheme implemented (FIIS) was implemented in 21 Districts of 13 States. The objective of the scheme was to protect not only the income of the farmer, but also to reduce the government expenditure on procurement at Minimum Support Price (MSP). FIIS was implemented on the basis of 'homogeneous area' approach in respect of rice and wheat crops only. The scheme was compulsory for loanee farmers and voluntary for non-loanee farmer. The premium rates were actuarial, determined for each State at the District level, to be subsidized by the Govt. of India.

f. Weather Based Crop Insurance (WBCIS) 2007 –

In 2007 for the very first time compulsory coverage for all loanee farmers came with introduction of Weather based crop Insurance Scheme, in which there were many private insurance companies as insurance providers. Weather index-based crop insurance was another insurance instrument developed to cover losses in crop yield triggered by adverse weather parameters⁹. The loss was estimated and compensated by adopting an area approach. For crop loss assessment, a Reference Unit Area (RUA) deemed to be a homogenous area was framed and linked with a Reference Weather Station (RWS).

g. Coconut Palm Insurance Scheme (CPIS) 2009-

Coconut Palm Insurance Scheme (CPIS) was implemented on pilot basis from the year 2009-10 in the coconut growing areas of Andhra Pradesh, Goa, Karnataka, Kerala, Maharashtra, Orissa, Tamil Nadu and West Bengal. 50% of premium is contributed by Coconut Development Board (a Central Govt. agency); 25% by the concerned State Govt. and the remaining 25% by the farmer. The Insurance Company i.e. Agriculture Insurance Company of India (AIC) was responsible for implementing the scheme and for making payment of all claims. The CPIS was administered by the Coconut Development Board (CDB):

h. Modified National Agricultural Insurance Scheme (MNAIS) 2010 –

MNAIS was introduced with required up gradation and changes in NAIS during the 2010–11 Rabi season on a pilot basis in selected 50 districts as per the recommendations of the GoI Joint Group. Loanee farmers are registered compulsorily and for others, it was optional. Premium rates were charged on actuarial rate, 75% subsidy in premium to all the farmers, sharing of premium subsidy equally by the central and state government, claim liability was vested with the insurance company, the unit area was redefined to village panchayat for major crops, compensation for prevented sowing/planting risk and for post-harvest losses due to cyclone (in coastal areas), payment of 25% of expected claims as immediate relief, realistic threshold yield calculation, minimum compensation level increased to 70% from 60% under¹⁰.

The NAIS and MNAIS is replaced by the all new PMFBY i.e. Pradhan Mantri Fasal Bima Yojana, launched by Prime Minister Shri Narendra Modi on January.16.2016. All the previous schemes (NAIS and MNAIS) is replaced by PMFBY except WBCIS¹¹ in which premium rate made the same as PMFBY, providing one nation-one scheme concept. Along with PMFBY and WBCIS, Unified Package Insurance Scheme (UPIS) have been launched in 45 districts from April 2016 on Pilot basis. Coconut Palm Insurance Scheme (CPIS) also continues under NCIP.

i. Pradhan Mantri Fasal Bima Yojana (PMFBY).–

The NDA government then announced a new crop insurance program Named PMFBY in realization of limitations of existing crop insurance system which was not able to meet the needs of farmers . PMFBY scheme became operational from Kharif, 2016 with an objective to provide adequate insurance coverage and financial support to the farmers in the event of crop failure. Features of the new scheme as follows-

- (i) The sum insured is equal to the Scale of Finance (SoF) for that crop as fixed by District Level Technical Committee. Sum Insured for individual farmer is now equal to the Scale of Finance per hectare multiplied by area of the notified crop proposed by the farmer for insurance. The scale of finance takes into account the cost of cultivation on the basis of land quality, irrigation expenses and facility as well as cost of fertilizers, seeds and labour which varies from one district to another.
- (ii) The premium rates payable by farmers for Food Crops and Oilseeds (FCOS) is fixed at 2 percent of the Sum Insured or Actuarial rate, whichever is less, for Kharif season and 1.5 percent for Rabi season. For commercial/horticulture crops, premium rate of 5 percent is fixed to be paid by the farmer. The difference between premium rate and rate of insurance payable by farmers will be shared by the Central government and the State government equally as premium subsidy.
- (iii) The minimum number of Crop Cutting Experiments (CCEs) required at village level is 4 for major crops and 8 for other crops. Inputs from RST/satellite imagery would also be utilized in optimizing the sample size of CCEs.
- (iv) The CCEs have been lacking in reliability and speed in estimation of crop yield. The use of mobile based technology with GPS stamping was recommended to improve the quality of data and make faster assessment of claims. The expense in procuring handheld devices/smart phones are to be borne equally by the Centre and the State, with a cap on total funds to be made available by the Central government. The use of technology available in the fields of remote sensing, aerial imagery, satellites etc. would reduce manpower and infrastructure. It is estimated that using a mix of modern technology can be expected to minimize the number of CCEs by about 30 percent.
- (v) The public sector company, Agriculture Insurance Company (AIC) of India along with other public and private insurance companies is participating in

the new crop insurance scheme. The selection of Implementing Agency (IA) is made by state governments by adopting a cluster approach consisting of 15-20 'good' and 'bad districts', based on risk profile, with reference to the bid to be laid out. Selection of IA is to be made through competitive bidding upto 3 years.

- (vi) The cut-off date for the receipt of yield data is within one month of final harvest. Processing, approval and payment of final claims is based on the yield data and it is to be completed within three weeks from receipt of yield data.
- (vii) The government (both Central and State) must release 50 percent share of premium subsidy to insurance companies, in the beginning of every crop season, based on fair estimates submitted by them, and settle balance of actual premium subsidy for season as soon as final figures are submitted by insurance company.
- (viii) Adequate publicity is to be given in all villages of the notified districts through fairs, exhibitions, SMS, short films, electronic and print media and documentaries. The crop insurance portal should be regularly uploaded with all published material information.

Issues in implementation of PMFBY –

The scheme is launched in 2016 with an object to achieve the target of 100 million hectares but as of now it is not achieved even after issuance of operational guidelines. The revamped guidelines for PMFBY introduced in February 2020 mandated use of satellite technology for CCEs and offered an states option to choose a district-level value of notional average yield (the value used, together with the minimum support price, to calculate the SI for any crop). The new rules didn't bring any change on the ground, however, because implementing agencies of PMFBY at the state level didn't act upon it. The threshold yield calculation was also changed to help increase payouts

for farmers—it became the average yield of the best five of the past seven years multiplied by the applicable indemnity level. However, this change, too, did not receive much appreciation from farmers, who were stressed because of the serious administrative glitches in the PMFBY scheme. The success of any crop insurance scheme depends on a proper loss assessment and timely payment of claims. PMFBY has faltered on both these counts, which is perhaps why it has not gained sufficient grip with stakeholders.

The major shortcomings of this Scheme are as follows –

- (i) PMFBY remains a scheme for loanee farmers as they are mandatorily required to take insurance. The percentage of non-loanee farmers availing insurance remained less than 5 per cent during Kharif 2016 and 2015. This scheme also failed to provide coverage to non-loanee farmers. Just like the previous schemes only land owners are covered and not tenant farmers and sharecroppers, who would have put in the share.
- (ii) The major error lies in the approach of working out the average loss. Earlier the block or tehsil level was considered while evaluating the crop loss suffered by a farmer. In PMFBY also, a village or a village panchayat has been taken as the unit of insurance.
- (iii) Irrespective of the damage an individual farmer suffers like from a hailstorm or inundation the reimbursement he will get will be calculated on the average loss in crop production in a village. This is a very major cause why farmers were never enthused to taking insurance which subsequently resulting in very less coverage of non-loanee farmers. In an entire village panchayat, random sample have been taken from only four farms, which will decide that any farmers of that village panchayat will get any claim. Therefore, PMFBY does not assure relief for individual farmer in the case of crop loss. Bringing insurance unit at individual farm level is a major technological challenge, which should be addressed at the earliest. Insurance unit must bring down to individual farm level or else it is still a gamble for insured farmers.

- (iv) Losses inflicted by wild animals are not included in the coverage of PMFBY. A large number of farmers face losses from wild animal attack. Animals like wild boars; blue bull causes a lot of destruction in fields which is the major problem in certain states.
- (v) Another major defect which can be observed that regardless the degree of crop losses, the sum insured is kept at a minimal level. Given that the loss assessment is based on the average loss incurred in a village, if the sum insured is lower than the threshold levels, it is obvious that the claimant will get only a fraction of what his loss is.
- (vi) A non-effective complaint redressal mechanism for farmers. Even the agriculture department officials have shown displeasure as regards the failure of insurance companies towards fulfilling requirements of PMFBY operational guideline. There has been a significant delay in claim redressal to farmers. There should be strict compliance of timelines regarding the claim settlement process as well as to provide adequate and timely payment to farmers. Only those crops which are notified by states under PMFBY can avail the insurance, which is limited somehow. This can act as an obstruction to crop diversification. PMFBY must make insurance appropriate to the farmers by counting more and more crops under notification subsequently allowing insurance for mixed cropping.
- (vii) The grievance redressal system to sort out farmers problems is too complicated for farmers. A toll-free help line number should be channelized on state level to work out all the concerns, queries of farmers regarding agriculture insurance. This service should serve as a one-stop solution.

4. CHALLENGES TO AGRICULTURAL INSURANCE IN INDIA-

Recent experiences in the context of India shows that even with good intentions and reforms to support smallholders through crop insurance programs, success remains

subtle. Several challenges continue to ruin implementation of the insurance program. It includes loopholes in making of the program which exploited by the insurance companies, the agriculture department officials, and sometimes the farmers themselves. Research on crop insurance programs in developing countries identifies adverse selection and moral hazard¹² as challenges (due to difficulty in measuring risks and monitoring farmer behavior in addition to lack of efficiency in claims handling lack of financial and human resources for crop yield surveys, and the absence of legal and regulatory frameworks to protect farmers against potential insurer malpractice. Low demand for crop insurance products in developing countries is also a problem, and it raises the question of sustainability and viability. Crop insurance programs offer an uncertain benefit in exchange for a certain cost, and not many farmers see this favorably, resulting in low uptake of crop insurance products. Large number of uneven small and isolated landholdings, differences in climatic and soil types, inadequate baseline data, range of farm practices render it to operate the insurance plan on an "individual basis". Most of the farmers are illiterate and having less resources. Due to these, farmers don't have sufficient knowledge of the insurance plan and how it works. Therefore, it is very difficult to enroll all the farmers in crop insurance schemes¹³. Because of the severity of poverty among farmers, the non-loanee farmers could not afford to pay a huge premium at once. Non-availability of adequate land records is hindering the registration of farmers in crop insurance schemes¹⁴. Lack of awareness, farmers could not take up insurance according to the output, and dissatisfaction with the terms and conditions of insurance facilities were the major factors behind a lack of insurance adoption in India.

5. CONCLUSIONS AND RECOMMENDATIONS-

Agriculture insurance plays an important role in agriculture development and it is believed that expansion of agriculture insurance will have positive effects on income of farmers. Despite of various schemes launched from time to time in the country agriculture insurance has served very limited purpose. The coverage in terms of area, number of farmers and value of agricultural output is very small, payment of indemnity based on

area approach miss affected farmers outside the compensated area, and most of the schemes are not viable. Expanding the coverage of agriculture insurance would therefore increase government costs considerably.

Unless the Scheme is restructured carefully to make it viable, the prospects of its future expansion to include and impact more farmers are remote. In the operational guidelines of PMFBY, the use of mobile based technology with GPS stamping has been mandated to improve the quality of data and make faster assessment of claims. Unfortunately, even after almost four years of the implementation of the scheme, mobile devices have not been procured to make smart assessment of crop yield. It is recommended that there should be conducting, monitoring and evaluating a small number of high quality CCEs. This should be supervised and monitored by independent experts from state agricultural universities and Krishi Vigyan Kendras. The use of satellites to identify farmland for conducting CCEs is recommended to promote transparency and minimize the CCEs. Satellite images could be used to determine broad location of CCEs, determination of area sown to validate area insured and it may be possible to conduct CCE in areas which are prone to higher losses. Use of handheld devices and mobile phones to capture multiple images in case of heterogeneity of field conditions in a village could be beneficial in assessment of damage. Use of drone/satellites could be a potential break through and 'realistic crop insurance' could be made possible by leveraging on technology and having minimal reliance on human intervention. Satellites and drones provide imagery data for assessing agriculture damage. Collaboration with ISRO and satellites from other countries could play a significant role in increasing the frequency of images captured for assessment of damage. Drones could also be used for providing images for assessing crop damage. As they fly at low heights, the data could be captured with greater accuracy and the problem of cloud obstruction can be avoided. They could be used to make quick assessment of localized hailstorms, flood, etc. However, flying of drones in the country needs many official clearances, which is time consuming. A single window clearance mechanism must be made available to make wide scale usage of drones for agriculture in India.

There is no specific provision in the Indian Penal Code for insurance fraud, and insurance companies exploit this to their advantage. If strict punishments are developed under law for noncompliance with the contract and/or fraud and breach of trust, by either of the parties to an insurance contract, they will have far-reaching implications.

For success in implementation of any intervention, different stakeholders should actively participate, and that is missing in current scheme i. e. PMFBY. Ensuring buy-in and involvement from stakeholders is important to create a climate for successful implementation. The centrally designed program has failed to take the state governments fully on board. The role of state governments becomes critical in PMFBY because they are the ones who finalize the insurance company for every cluster in the state, pay half the premium subsidy, and conduct CCEs. The officers of the state governments must become ambassadors of the PMFBY program and build awareness among the state functionaries, such as those in the extension system.

The need for strong administration and a legal framework to check the vested interests of the parties involved has been disregarded in the PMFBY program, and therefore suggests to create a robust implementation methodology and articulates it well for the understanding of all the stakeholders. It suggests setting up a system for monitoring implementation through private audit teams, receiving feedback from farmers and other stakeholders, and conducting outcome evaluation.

Farmers have a very little knowledge on sum insured, premium rates, etc. The time period taken for assessment of claims make the product unappealing to them. There is urgent need to create awareness among farmers through government agencies, insurance companies and banks. Farmers should receive an SMS as soon as they purchase the insurance product so that they are well informed about compulsory deduction of premium, the amount of sum insured and procedure of claim settlement. It has to build trust through greater transparency, by applying high technology, regularly sharing relevant data on insurance portal, adhering to timelines for cut-off dates for registration as well as

conducting CCEs within stipulated time mentioned in operational guidelines, and video recording those. Only then premiums will come down, and will the subsidy burden to government, and timely benefit will be given to settle the claims of farmers.

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