

Performance of Pradhan Mantri Fasal Bima Yojana (PMFBY) in Gujarat: Uptake, Adoption and Willingness to Pay

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Foreword

India is basically an agrarian country because more than 70 per cent of the total population of the country directly or indirectly depends upon agriculture and allied sectors. The livelihood of majority of population of rural areas of the country is also depended on agriculture. Since, the inception of Green Revolution in the country, the production of wheat and paddy has increased manifold. The country is not only self-sufficient in foodgrains but also exporting to foreign countries. This was achieved by hard work of the farmers. The credit goes to the farmers of the country. It is a primary duty of Centre and State Governments to increase income of farmers by providing them with financial help and assistance to use the new techniques in agriculture. The agriculture is still dependant on weather conditions. It is still a gamble of monsoon. The droughts, floods, heavy rains, hail storm, etc are common phenomena in the country. The attack of pests/insects diseases etc. also occur on the crops. These are causes of failure of crops. On account of this, indebtedness is increasing among the farmers. The failure of the crops and indebtedness etc are basic reasons for famers' suicides in the state.

A number of Agricultural Insurance Companies have been introduced in the country to protect the farmers from natural calamities. In this context, National Agricultural Insurance Scheme (NAIs) had been introduced in 1999-2000 across the country but it could not be popularized among the farmers. The rate of premium of NAIs was high and also not uniform. It had not been properly and scientifically implemented at ground level. It was also very problematic and had many bottlenecks.

Seeing the failure of NAIs, the Hon'ble Prime Minister of India had launched Pradhan Mantri Fasal Bima Yojana (PMFBY) on 18th February, 2016. Almost all crops of Kharif and Rabi seasons are notified under PMFBY. The rate of premium is also very nominal which could be paid by even small and marginal farmers. To assess the performance of PMFBY, the Centre for Management in Agriculture (CMA)-IIM Ahmedabad had submitted a study proposal on Performance, Evaluation of Pradhan Mantri Fasal Bima Yojana (PMFBY) to Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Govt. of India. It had been accepted in Directors Meeting which was held on 25th August, 2017 at IEG, New Delhi. On the advice of Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Govt. of India, the cited study has been conducted in Gujarat in 2016-17 by this Centre. This study has been conducted in the guidance of Prof. Ranjan Kumar Ghosh, Assistant Professor, Centre for Management in Agriculture (CMA), Indian Institute of Management, (IIM) Ahmedabad. Being the coordinator, the team worked hard and provided research design of the study and necessary guidance for the study.

I am thankful to authors and the research team for putting in a lot of efforts to complete this excellent piece of work. I also thank the Ministry of Agriculture and Farmers Welfare, Government of India for the unstinted cooperation and support. I hope this report will be useful for those who are interested in policies and governance issues related to irrigation water management in the State.

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LIST OF ABBREVIATIONS

AIC- Agricultural Insurance Company Ltd
APR- Actuarial Premium Rate
CCE- Crop Cutting Experiments
CCIS- Comprehensive Crop Insurance Scheme
DBT- Direct Benefit Transfer
DCEs- Discrete Choice Experiments
DLTC- District Level Technical Committee
ECIS- Experimental crop insurance Scheme
FGDs- Focus Group Discussions
FIIS- Farm Income Insurance Scheme
GMNL- Generalized Multi-Nominal Logit
IA- Implementing Agency
LPC- Land possession Certificate
MF- Marginal Farmers
MNAIS- Modified National Agricultural Insurance Scheme
NAIS- National Agricultural Insurance Scheme
OBC- Other Backward Caste
OLS - Ordinary Least Square
PCIS- Pilot Crop Insurance Scheme
PMFBY- Pradhan Mantri Fasal Bima Yojana
PRIs- Panchayati Raj Institutions
PSSCI- Pilot Scheme on Seed Crop Insurance
RoR- Records of Right
SAO- Seasonal Agricultural Operations
SC- Schedule Caste
SF- Small Farmers
SLCCI - State Level Coordination Committee on Crop Insurance
SI- Sum Insured
ST- Schedule Tribal
TY- Threshold Yield
WBCIS- Weather Based Crop Insurance Scheme
WTP- Willingness to Pay

EXECUTIVE SUMMARY

Backdrops

India is an agrarian economy and agriculture is primarily a gamble of monsoon. As a result, farmers are exposed to a variety of climatic and economic risks. Millions of tonnes of agricultural produce are damaged by these risk factors each year across the country. On account of failure of crops, indebtedness, illness, frustration, family dispute etc are also increasing among the farmers. The failure of crops and indebtedness are major cause of farmers' suicide across the country. Since, agriculture is highly susceptible to natural calamities such as floods, droughts, heavy rains, hail-storm, pests/insects, diseases etc., it is necessary to protect the farmers from the adversities which occur frequently across the country. Agricultural insurance is considered as an important mechanism to address the risk of output and income resulting from various natural and manmade events. A number of crop insurance schemes like Pilot Crop Insurance Scheme (PCIS), Comprehensive Crop Insurance Scheme (CCIS), Experimental Crop Insurance Scheme (ECIS), Pilot Scheme on Seed Crop Insurance (PSSCI), Farm Income Insurance Scheme (FIIS), Sookha Suraksha Kavach, National Agricultural Insurance Scheme (NAIS), Weather Based Crop Insurance Scheme (WBCIS), etc. have been implemented in the country over a period of time. Looking at changing needs of the farmers, Pradhan Mantri Fasal Bima Yojana (PMFBY) was implemented since Kharif 2016, replacing NAIS and modified NAIS.

The new scheme compulsorily covers the farmers that avail the seasonal crops loan (loanee farmers), whereas it was optional for non-loanee farmers. All major Kharif and Rabi crops are notified under PMFBY. The premium rate of Kharif crops is fixed i.e. 2% of sum insured to be paid by farmers, while it is 1.50% of the value of sum insured for Rabi crops. In case of commercial and horticultural crops, 5% of the sum is insured to be paid by the farmers. From sowing to threshing of crops, everything is covered under PMFBY. It is a new scheme which had been uniformly started throughout the country. A number of agencies are involved in the process of PMFBY. In Gujarat, two insurance companies namely Agricultural Insurance Company (AIC) and HDFC Ergo were involved for implementation of the scheme during Kharif-2016 and Rabi-2017.

Objectives and Methodology

The present study was undertaken (i) to assess the performance and functioning of the PMFBY scheme in Gujarat; (ii) to examine the role of different stakeholders such as insurance companies (known as the implementing agencies), the financial institutions (nodal and lending banks), insurance agents and farmers/cultivators for efficient functioning of the scheme in the state; (iii) to assess the extent of adoption of PMFBY by the farmers, the benefits realised and the constraints faced by the farmers; and (iv) to assess the willingness to pay by the farmers and necessary modifications required in the scheme so as to make it more effective for the farmers.

The study was conducted in two phases. In the 1st phase, the process of implementation at the state level was comprehensively mapped. In the exercise, 9 AERCs were involved. The study was involved mixed methods of data collection involving both secondary and primary sources of data.

The phase I study was intended to focus mainly on performance of PMFBY and implementation issues in the state. As per the stated distribution, a total of 150 households were covered under the detailed survey (Table 1.4). Out of 150 households, 110 households were loanee farmers (beneficiary farmers), 10 households were non-loanee farmers and another 30 households were control farmers.

In the phase II, two districts (Anand and Vadodara) were selected for the survey. From each of the

district, 72 households were selected from two blocks and 6 villages. From each block, three villages were selected. In total, 144 households were selected from 12 villages covering 4 blocks of two selected districts.

The data were analysed with the help of simple statistical tools. However, during the second Phase, Generalised Multi-Nomial Logit (GMNL) model was used for making a parametric estimation of the likelihood of a farmer opting for a crop insurance scheme such as PMFBY. The dependent variable was a *categorical* - representing farmers with and without crop insurance. Explanatory variables included some utility parameters such as coverage period of crop insurance, loss determination method, certainty of payment and sum insured. The Ordinary Least Square (OLS) Method was also used to assess the strength of factors affecting the willingness to pay.

Progress in Implementation of PMFBY in Gujarat

PMFBY is a flagship scheme of crop insurance implemented since Kharif 2016 with an ambition of covering 50 percent of the farmers in India within 5 years. The majority of the farmers insured under PMFBY belong to four states namely Maharashtra, Rajasthan, Madhya Pradesh and West Bengal constituting about more than 72 percent of the total farmers covered in India. Uttar Pradesh, Bihar, Karnataka, Gujarat contributes 10 to 15 percent each in the total number of farmers insured under PMFBY in India, while the coverage is very low in all the other states. As far as area insured under PMFBY is concerned, Rajasthan occupies the major share followed by Madhya Pradesh, Maharashtra and Uttar Pradesh. Chattishgarh, Odisha, Gujarat, West Bengal constitutes about 6-8 percent share each in the total area insured under PMFBY in India.

In Gujarat, around 4 lakh of farmers were insured with 6.8 lakh hectares area under PMFBY in year 2016-17. Among the implementing agencies, AIC cluster has covered major share of the farmers. There was a common complaint about the earlier schemes that they provided cover to crop loans rather than to crop losses, as the participation rate of non-loanee farmers was very low. Hence, more emphasis was given on the coverage of non-loanee farmers under PMFBY. In Gujarat, among the total farmers covered during Kharif 2016, around 0.02 lakh farmers were non-loanee farmers in kharif season.

Around 10 percent share in premium was paid by farmers for Kharif season whereas during Rabi season, around 45 percent share in premium was borne by the farmers during 2016-17. About 90 percent of total premium for Kharif season and 55 percent in Rabi season were paid by the state and central government jointly.

During Kharif 2016, the applications for claims in the state were mostly made by the farmers of Junagadh, Rajkot, Surendranagar and Jamnagar district. Of these, the farmers of Rajkot, Junagadh, Amreli, Jamnagar and Devbhumi Dwarka received the maximum claims. A total of 44335 farmers got benefit with claim settlements in the Kharif season. For Rabi season, the applications for claims were mostly made by the farmers of Junagadh, Jamnagar and Rajkot district. Of these, highest Junagadh district farmers got the benefits of claim settlement; total 39564 farmers got benefit for claim in Rabi season of 2016-17. Thus a total of 482899 farmers were benefited with receipt of claims under the PMFBY in 2016-17.

Though the coverage under new scheme has increased, several factors have contributed to the scheme slowing down. Some of them are insufficient time for enrolment, disputes between the states and insurance companies on yield data and compensation resulting in delay in settlement and more focus on impractical targets/goals without much stress on quality of implementation. The central government has been citing poor implementation by the states for the lackadaisical response to the scheme. State officials say that the bid of private insurance companies for more profit and delay in settlement of claims are crucial factors for the decline.

Insurance Behaviour of Sample Farmers

Since the premium rates and insurance details varies from crop to crop, two major Kharif crops cotton and groundnut and one major Rabi crop wheat were considered for understanding the insurance behavior of sample farmers. About 54.2 percent and 27.7 percent of loanee insured farmers had taken crop loan with crop insurance from Cooperative bank or society and Bank of Baroda respectively. Remaining farmers had taken crop loan with insurance from Central Bank, Cooperation Bank, Dena Bank, PNB, SBI and Union Bank of India; whereas all non-loanee insured farmers had taken crop insurance from Agricultural Insurance Company Ltd (AIC).

Among different kinds of events of losses, the highest of 53.0 percent of event of losses were due to drought, dry spells, flood, pest attacks and diseases etc.; while 20.5 percent of event of losses were because of prevented sowing/planting due to deficit rainfall or adverse weather and remaining events of losses were due to post harvest losses, localised calamities (cyclone, landslide).

As far as compensation received from insurance companies is concerned, an average of Rs. 13523.4 and Rs. 15480.0 were paid to the farmers against the crop loss for loanee insured farmers and non-loanee insured farmers respectively. Thus, the compensation for crop losses was more to the non-loanee farmers compared to the loanee farmers.

Average premium paid by loanee and non-loanee groundnut farmers was Rs. 1323.3 and Rs. 1470.7 per household respectively. In case of loanee farmers, about 90.0 percent events of losses were because of drought, dry spells, flood, pest attacks and diseases etc and remaining events of losses were due to prevented sowing/planting due to deficit rainfall or adverse weather. In case of entire non-loanee insured farmers, the crop yield loss was due to drought, dry spells, flood, pest attacks and diseases etc.

As far as compensation received from insurance companies is concerned, an average of Rs. 34039.7 and Rs. 23220.0 were paid to the farmers against the crop loss for loanee insured farmers and non-loanee insured farmers respectively. Thus, the compensation for crop losses was much higher in case of loanee farmers compared to non-loanee farmers.

As regards Rabi crop wheat, average amount of premium paid by the loanee and non loanee farmers was Rs. 4800.0 and Rs. 3525.0 respectively. It is worth-mentioning that, during Rabi season (wheat crop) both categories of sample farmers had no claim against any event of crop losses, thus did not receive any compensation.

Assessment of the overall experience of sample farmers with PMFBY reveals that, about 36.4 percent loanee insured farmers said that they were never insured under earlier crop insurance scheme, 45.5 percent of them said that PMFBY is better than earlier schemes whereas 70 percent non-loanee insured farmers said that it is better than earlier schemes.

About 70 percent loanee insured farmers informed that they have informed the authorities about the event of losses. Among them, 37.3 percent and 24.5 percent loanee insured farmers had informed about the event of losses directly to local government officials and others (Gram Sevak and Agriculture Officer), respectively. In case of non-loanee farmers, all of them had informed about the event of losses directly to local government officials.

Of the total loanee insured farmers, 27.3 percent said that their farm was visited during Crop Cutting Experiment (CCE) while 40.9 percent said that their farm was not visited for CCE. Among non-loanee insured farmers, 20 percent said that their farm was visited during CCE while 80 percent said that their farm was not visited for CCE. Of the total loanee insured farmers, 26.4 percent said that they were aware about yield assessment of CCE while 41.8 percent that they were not aware about yield assessment of CCE.

Among the loanee insured farmers, about 31.8 percent farmers suggested to provide timely compensation, 22.73 percent suggested to provide more accurate assessment due to crop losses, 18.1 percent expressed the need of more awareness about the crop insurance scheme. About 8.1 percent suggested to reduce official complexity and emphasized on less time requirement and less paper work for enrolment and claim disbursement.

Regarding extent of awareness about PMFBY and the non-uptake of the same by the control farmers, it is revealed that, about 73.3 percent of the control farmers had heard about PMFBY and 26.6 percent control farmers of them had no idea about PMFBY. As regards the sources of awareness, about 43.3 percent, 16.6 percent, 10 percent and 3.3 percent of control farmers got the information about PMFBY from cooperative society, media, farmer's friend and gram sevak respectively. About 33.3 percent of control farmers expressed that they are not interested in this scheme, while 20 percent of them believed that the claim settlement process is tedious. About 13.3 percent of them believed that they may not get compensation due to crop losses, whereas only 6.7 percent farmers expressed that no sufficient time was there for getting enrolled for the crop insurance, even if they were interested to get enrolled for the same.

Willingness to Pay for Crop Insurance by Sample Farmers

The extent of willingness to pay for crop insurance products and services was assessed by the use of discrete choice experiments (DCEs), which DCE is an attribute-based survey method for measuring benefits (utility). Since it was entirely different kind of experiment where the name of PMFBY scheme was not disclosed, entirely new set of sample households were surveyed from the sample districts of Gujarat. However, all farmers were asked to share their experiences of enrolling for PMFBY after the end of the experiments. In total, 144 farmers were chosen for the experiment from 12 villages of 4 talukas of 2 districts (Anand and Vadodara) of the state.

The results from estimating the utility function (a generalized multinomial logit function) reveal that all the estimated coefficients of variables such as sum insured, certainty of payment, insurance coverage, loss determination are statistically significant at 1 percent level of significance. Thus, all these factors significantly influence the willingness to pay for the crop insurance. It is found that a farmer would be willing to pay Rs. 889 on an average for increase in the certainty of payment made to him as against the base category.

The analysis on the willingness to pay for an attribute on several household characteristics like age, farming experience, caste, gender, etc. with Ordinary least square regression reveal some interesting results. The study finds that, for 'Coverage: Pre-Planting', if the area cultivated in Kharif 2017 rises by 1 acre then the willingness to pay rises by Rs. 621 on an average. Likewise, if age of the farmer rises by 1 year, then he would be willing to pay Rs. 617 on average extra for 'Coverage period: Sowing to harvesting'.

Policy Implications

The study reveals some interesting results on uptake, adoption and performance of PMFBY in Gujarat. This scheme was better than NAIS because lesser premium was paid by farmers and claim settlement process was more scientific which was decided through CCEs data. For main crops, CCEs were conducted at Gram Panchayat level and the CCEs were conducted at block level for other secondary crops. However, there are a number of areas where the present scheme can be further improved. There is a need to address issues such as delay in claim settlements; generating sufficient awareness in farmers about formulation and implementation of risk reduction strategies, developing suitable crop insurance product and effective implementation strategies and infrastructure, investing in R&D on insurance product design in collaboration with private insurance service providers, substituting relief payments with crop insurance system, covering

the price risk along with weather risk and substituting relief payments with crop insurance system. Based on findings of the study and interaction with various stakeholders, following suggestions are made for improving the adoption and performance of the PMFBY in Gujarat.

- At present, the enrolment of loanee farmers under PMFBY is compulsory and that of non-loanee farmers is optional. Several farmers and farmer organizations, leaders etc. have suggested to make the scheme voluntary for the loanee farmers also.
- At present, the scheme covers major food crops (cereals, millets and pulses), oilseeds and annual commercial/ horticultural crops. It is suggested that the perennial horticulture crops should also be included under the scheme.
- Pests and diseases come under preventable risks and insurance companies do not consider for claims where losses occur due to pests and disease. Thus, it is necessary to clearly define the non-preventable risks or disease and pest should be considered as non-preventable risks. The unseasonal rain should be defined clearly in Operational Guidelines of PMFBY.
- Localized calamities are required to be clearly defined because insurance companies categorically deny the claims under local risks. Some of the risk factor like crop losses through wild animals should be incorporated in the guidelines. The operational guidelines should be in local languages for better understanding of the farmers.
- Majority of farmers do not have proper knowledge about crop insurance. Even the farmers do not know that they have been insured under the scheme. The farmers are unaware that the amount of crop insurance premium is automatically deducted from their account. Thus necessary awareness programmes should be organized periodically.
- In case of loanee farmers, the premium amount deducted is stated in their Saving Bank Passbook. In some other cases, the same has not been stated in Bank Passbook (i.e., Bank of Baroda, Dena Bank). Thus, some farmers suggested that the premium deduction receipt should be provided to them for their record. There should be a document provided to the farmers like premium deducted receipt, insurance document, crop loss coverage criterion, guidelines, contact list of company etc., which will help them at the time of loss assessment and claim settlement.
- Because of less number of banks available in the nearly areas, farmers fail to get insured. Thus, it is suggested to increase the number of bank branches. There should be atleast one nationalized bank branch for every five villages.
- Some farmers complained that they were not given compensation even if they had incurred heavy crop losses due to no loss assessment or delayed loss assessment. In that case, farmers demanded that the amount deducted as a premium should atleast be given back to them since the claim was not settled by the respective company. In the case delay in claim settlement, the additional interest amount should also be paid to the farmers.
- The control farmers expressed that they couldn't avail crop insurance since the land settlement was in process. Some of them came for enrolment after the due date. They suggested that timely information should be passed on to them. They further suggested that the paper work and official procedure should be reduced or simplified for successful implementation the crop insurance scheme.
- It is also clear from the discussion that PMFBY would not be sufficient to cover all the pure risks arising from agricultural activities. To protect farmers against various kinds of climatic risks, a comprehensive risk mitigation strategy needs to be planned rather than just focusing on crop insurance.