

EVALUATION OF THE PRADHAN MANTRI FASAL BIMA YOJANA IN JAMMU DISTRICT

By

Lalita Bhagat
(J-18-M-533)

**Thesis submitted to Faculty of Agriculture in partial fulfillment
of the requirements for the degree of**

MASTER OF SCIENCE IN AGRICULTURE

Agricultural Extension and Communication



Division of Agricultural Extension Education

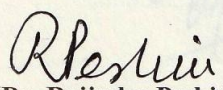
**Sher-e-Kashmir University of Agricultural Sciences & Technology of Jammu
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CERTIFICATE-I


This is to certify that the thesis entitled “**Evaluation of the Pradhan Mantri Fasal Bima Yojana in Jammu District**” submitted in partial fulfillment of the requirements for the degree of **Master of Science (Ag.) in Agricultural Extension and Communication** to the Faculty of Agriculture, Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, is original work and has similarities with published work not more than minor similarities as per UGC norms of 2018 adopted by the University. Further the level of minor similarities has been declared after checking the manuscript with “**Urkund**” software provided by the University.


The work has been carried out by Miss **Lalita Bhagat** under my supervision and guidance. No part of the thesis has been submitted for any other degree of diploma. It is further certified that help and assistance received during the course of thesis investigation have been duly acknowledged.


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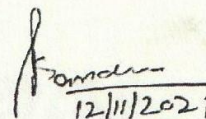
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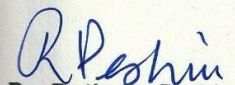
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This is to certify that the thesis entitled "Evaluation of the Pradhan Mantri Fasal Bima Yojana in Jammu District" submitted by Ms. Lalita Bhagat Registration No.: J-18-M-533, to the Faculty of Agriculture, Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu in partial fulfillment of the requirements of the degree of Master of Science (Ag.) in Agricultural Extension and Communication was examined and approved by the Advisory Committee and External Examiner on 12-11-2021.


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ABSTRACT

Title of the Thesis : **EVALUATION OF THE PRADHAN MANTRI
FASAL BIMA YOJANA IN JAMMU DISTRICT**

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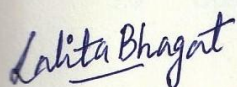
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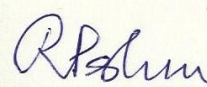
Abstract

The present study, "Evaluation of the Pradhan Mantri Fasal Bima Yojana in Jammu district" was conducted by employing the exploratory with/without design. A sample of 160 PMFBY farmers from the eight blocks of Jammu district namely Akhnoor, Khour, Balwal, Nagrota, Dansal, Bishnah, Marh and R.S. Pura were selected by employing purposive cum random sampling method. For control group, 40 non-PMFBY farmers were selected by employing convenient sampling method. The data were collected through structured interview schedule. The result revealed that majority of farmers (80%) in both the PMFBY and the non-PMFBY were having marginal landholding and 88 percent farm households had non-farm sources of income. Compared to the 100 percent PMFBY farmers having Kisan Credit Card (KCC), only five percent of the non-PMFBY farmers had KCC and this was the main reason for non-PMFBY farmers not getting their crop insured. This was also reflected by the fact that significant difference was observed in financial inclusion of the PMFBY and other farmers. The area coverage under crop insurance in 2017-18 for *kharif* and *rabi* crops ranged between 22.8 percent and 25.1 percent respectively, over time the PMFBY does not show a positive impact, as in 2019-20 and 2020-21, the farmers and area covered under the crop insurance was zero. Though in *kharif* 2021, 18654 farmers had insured under the PMFBY, but the area covered has declined (47.1 %) with respect to *kharif* 2017. Overall perception index of the sampled PMFBY farmers towards the PMFBY crop insurance was 0.50, which is not favorable. The socio-economic independent variable having significant negative association with the dependent variable of PMFBY adoption were: level of education, government employment, shop-keeping and MGNREGA. Whereas average family size, private employment, KCC holder and number of source of income were positively correlated. The main reason for non-adoption of the PMFBY by the control group of farmers was that the PMFBY scheme of crop insurance is beneficial to larger farmers which cannot be substantiated from the data as the majority of sampled farmers in the PMFBY and non-PMFBY groups were having marginal landholding. The government need to popularize the PMFBY scheme for its scaling out and it should not be area specific but it should be individual assessment based.

Keyword: PMFBY, Awareness, Coverage, Perception, Financial inclusion



Signature of Student



Signature of Major Advisor

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LIST OF ABBREVIATIONS

%	Per cent
<i>et. al</i>	et alia (and others)
etc.	Etcetera
Fig.	Figure
Ha	Hectare
J&K	Jammu and Kashmir
Km	Kilometer
MoA	Ministry of Agriculture
SPSS	Statistical Package for Social-Sciences
KVK	Krishi Vigyan Kendra
AEO	Agriculture Extension Office
KCC	Kisan credit card
SKUAST	Sher-e-Kashmir University of Agricultural Sciences and Technology
PMFBY	Pradhan Mantri Fasal Bima Yojana
NAIS	National Agricultural Insurance Scheme
WBCIS	Weather Based Crop Insurance Scheme
MNAIS	Modified National Agricultural Insurance Scheme
Mha	Million hectares
CCE_s	Crop cutting experiments
CCIS	Comprehensive Crop Insurance Scheme
FGD	Focussed group discussion
OLS	Ordinary least square
MPCIS	Multi-peril Crop InsuranceScheme
CH	Climate Hazards
PI	Perception index
RWBCIS	Restructured Weather Based Crop Insurance Scheme
APL	Above poverty line
OBC	Other backward classes
ST	Scheduled tribe
SC	Scheduled caste
BPL	Below poverty Line
PHH	Priority household
NPHH	Non-priority Household

Chapter-I

Introduction

CHAPTER-1

INTRODUCTION

In India, agriculture is one of the main economic activities in the total workforce. Out of 481.7 million workforce, 118.7 million are cultivators and 174.3 million are agricultural labourers (MoAFW, 2015a). There has been a decline in absolute number of cultivators (farmers) since the last two census periods (MoAFW, 2015b), a decline of 4.8 percent. Farming is full of risks and is not able to provide economic prosperity to the farming families exclusively depend upon on-farm income for their livelihood (Peshin *et al.* 2018, Nanda *et al.* 2019). This has led to a shift from agriculture sector to other sectors. Other problems being faced by the farmers are that they are frequently exposed to numerous types of risks and uncertainties, which negatively impact on their agricultural production and farm income (Ghanghas, 2018). Crop insurance is one of the most effective mechanisms to mitigate agricultural hazards (Gulati *et al.* 2018).

1.1 Crop Insurance: An Overview

Benjamin Franklin was the first person to have thought about starting crop insurance in 1788. First crop insurance scheme (hail insurance) started in the 1820s in Germany and France for grapes and the first multi-peril crop insurance scheme (MPCI) started in the United State of America (U.S.A) in 1939 (Roa, 2012). A wide range of agricultural insurance schemes based on different approaches exist in the world. The (U.S.A) is the only country where revenue and income insurance exists. Revenue insurance is very important in U.S.A and 73% of the premiums collected are coming from these type of insurance. In Japan, there is a whole-farm insurance which covers against all climate hazards for all crops on the farm. The Canadian system is mainly run by public insurance agencies, by the provincial government (Bellundagi *et al.* 2020).

In March 1970, an expert group chaired by Dr. Dharam Narain presented a crop insurance bill and model scheme to an expert committee in India (MOA, 2014). Although crop insurance has been in the country since 1972, which was based on an individual approach. Until March 2016, there were three crop insurance schemes operating in India,

namely the National Agricultural Insurance Scheme (NAIS), the Modified National Agriculture Insurance Scheme (MNAIS) and the Weather-based Crop Insurance Scheme (WBCIS), yet it has encountered many problems, such as delay in payments to farmers and high premium. The premium rate of the previous crop insurance schemes namely MNAIS and WBCIS were high at 8-10 percent (MoAFW, 2014). By realizing the limitations of the previous crop insurance schemes, the Government of India launched a new crop insurance scheme, namely Pradhan Mantri Fasal Bima Yojana (Prime Minister's Crop Insurance Program) in 2016. The scheme is yield-based and another scheme which also currently operational that is restructured weather based crop insurance scheme (RWBCIS) which is based on weather index based in *kharif* to provide financial support to farmers suffering crop loss/ damage due to natural calamities/adverse weather conditions. In India, a total of 366.637 lakh farmers were insured in India under PMFBY and RWBCIS (combined) during *kharif* 2016 (Gujji and Darekar, 2019). In this scheme, the premium rate is 2 percent of the actual sum assured amount of *kharif* season crops and 1.5 percent of the total sum assured for *rabi* season crops and annual commercial and horticultural crops is 5 percent, to be paid by the farmers (Annexure I-V).

1.2 Coverage of Farmers

All types of farmers are covered under the PMFBY including sharecroppers and tenant farmers growing in notified crop in the notified area are eligible for coverage

- 1) **Compulsory coverage:** In which farmers who possess a crop loan/ kisan credit card (KCC) loan (loanee farmers) to whom credit limit is sanctioned for the notified crop during the crop season.
- 2) **Voluntary coverage:** Voluntary coverage can be obtained by all farmers not covered above, including crop loan/ KCC account holders whose credit limit is not renewed (Yadav, 2017).

Following are the operational guidelines of the PMFBY (MoAFW, 2020)

- I. Providing financial support to the farmer suffering from crop loss/damage arising out of unforeseen events.

- II. Stabilizing the income of farmer to ensure their continuance in farming.
- III. Encouraging the farmer to adopt innovative and modern agricultural practices.
- IV. Ensuring the flow of credit to the agricultural sector which will contribute to food security, crop diversification and enhancing the growth and competitive of agriculture besides protecting of farmers from production risks.

Following risks leading to crop loss are to be covered under PMFBY (MoAFW, 2020)

- 1) Comprehensive risk insurance is to cover yield loss to non-preventable risks, such as natural fires and lightning, storms, hails, cyclones and tempest, floods, inundation, landslides, droughts, dry spells and diseases etc.
- 2) Prevented sowing (notified area): In cases where the majority of the insurance farmers in a notified area having intend to plant and have incurred expenditure for the purpose, are prevented from planting the insured crop due to adverse weather condition, shall be eligible for indemnity claims up to a maximum of (25%) of the sum insured.
- 3) Post-harvest losses: Coverage is available up to a maximum period of 14 days from harvesting from those crops which are kept in cut and spread condition to dry in the field after harvesting against specific perils of cyclonic rain and unseasonal rains.
- 4) Localised calamities: Damage resulting from occurrence of identified localised risks for example hailstorm, landslide and inundation affecting isolated farms in the notified area.

In 2016-2017 of the PMFBY, total number of farmers covered was 58 million, a quantum jump from the 36.6 million insured in the previous year under the MNAIS. However, there had been a fall in the number of total farmer applicants from 58 million in 2016-2017 to 47 million in 2017-2018 (Rai, 2019).

The historical background of crop insurance scheme in India and their key features are depicted in Annexure(I).

In Jammu and Kashmir (J&K), the PMFBY was also launched in *kharif* 2016. After implementation of the PMFBY since April, 2016 enrolment of farmers under this scheme is 1.52 lakh (MoAFW, 2018). In 2017, the number of farmers covered in *kharif* season was 18,805 and in 2018 number of farmers covered under this scheme in *rabi* season was 8,074 in Jammu district¹. There was no empirical study regarding the operationalization of the PMFBY and farmers' awareness and perception about PMFBY in the J&K. Therefore, an empirical study entitled "Evaluation of the Pradhan Mantri Fasal Bima Yojana in Jammu District" was planned.

1.3 Objectives of the Study

1. To study the farmers awareness and perceptions about PMFBY
2. To study the limitations of PMFBY
3. To study the extent of coverage of PMFBY

1.4 Scope of the Study

- To help government and other stakeholders to generate awareness about the benefits of PMFBY among all categories of farmers and will help them in framing effective awareness programmes.

1.5 Limitation of the Study

The limitations of the study are:

- Owing to time and resource constraints to research scholar, limited sample size (200 farmers) was taken. A larger sample size would definitely tend to improve the generalizability.
- The data was collected by the personal interview method. There should be some

¹ Data pertaining to number of farmers covered under PMFBY in 2017-2018 collected from Department of Agriculture Production. and Farmer's Welfare, Jammu

discrepancies in actual information and expressed responses by the respondents.

- The research was limited to Jammu district of Jammu & Kashmir due to lack of time and other resources at the disposal of researcher. Hence, the results are largely applicable to those areas only where similar conditions exist.

Presentation of the Study

The thesis is offered in the six chapters for analytical ease and clear description of the current study results. Chapter-1 covers the introduction, objectives, significance, scope and limitations of the study. Chapter-2 deals with the review of literature related to the topic under study. Chapter-3 presents the methodology adopted including description of the study area, sampling frame, nature and sources of the data and the analytical techniques employed in the study. The results of the study are presented in Chapter-4 while Chapter-5 attempts to discuss these results. Chapter-6 provides a brief summary of the whole study and also suggests the policy implications from the findings of the study.

Chapter-II

Review of Literature

CHAPTER-2

REVIEW OF LITERATURE

A literature review is an account of what has been already established or published on a particular research topic by accredited scholars and researchers or it is a comprehensive, in depth, systematic scanning and critical review of selected literature to find out how it can be useful to present study (Taylor, 2001). Thus, the review of literature forms the foundation upon which all future research works must be built. In this chapter, the purpose is to convey what knowledge and ideas have been established on a topic and what their strengths and weaknesses are. It provides an insight and understanding to the researchers on various horizon and dimensions of their investigations. The review of literature was undertaken taking into account the specific objectives of the study. The available and relevant literature was reviewed and presented under the following heading:

- 2.1 Farmers Awareness about the Crop Insurance Schemes
- 2.2 Perceptions of Farmers about the Crop Insurance Schemes
- 2.3 Extent of Coverage of the Crop Insurance Schemes
- 2.4 Limitations of the Crop Insurance Schemes

2.1 Farmers Awareness about the Crop Insurance Schemes

Kumar *et al.* (2011) conducted a study on, “An analysis of farmer’s perception and awareness towards crop insurance as a tool for risk management in Coimbatore district of Tamil Nadu.” An interview of six hundred farmers spread over twenty seven out of thirty two district was conducted. Source of information was newspaper and television etc. Probit and Tobit were used to employ to study awareness and premium paid for crop insurance. It was observed from the end result that lesser awareness of farmers about crop insurance 48 per cent. The perception about crop or livestock insurance was reported by 15 per cent of the farmers. When 2/3rd of the farmers were aware about the risk mitigating measures being implemented by the government, only 50 per cent of the target group were aware about the crop insurance schemes or products.

Most important weak point of the crop coverage products as perceived by the farmers were area approach being followed by the insurance company in loss assessment was unacceptable by the farmers loss due to natural calamities was taken into account at firka level and individual loss were not considered.

Brindha's (2011) findings confirmed that the farm level performance of National Agricultural Insurance Scheme (NAIS) in Erode district of Tamil Nadu, found that all the insured and non-insured farmers were aware of crop coverage scheme, but their awareness about the various aspects of the crop coverage products was very much limited. The main demerits of the crop insurance scheme were very much delay in the compensation although the majority of the insure farmers (69%) and non-insured farmers (50%) respectively recognised that crop insurance was the better way of reducing the impact of yield risk.

Bobade and Mahajan (2012) conducted a study in Satara district Maharashtra state about the awareness of farmers about crop insurance scheme. They found that ninety eight percent out of insured farmers and twenty six per cent out of fifty non-insured farmers were aware about the crop coverage scheme. Stratified random sampling approach turned into used for sample selection. Their finding reported that awareness about the schemes is poor due to lack of proper interaction with in local level, and due to lack of effective image building and awareness of officers of implementing agency. Major source of information of crop insurance turned into direct client to client, banks and gram panchayat. The statistical analysis used for the study were percentage and measures of central tendency.

Ibitoye (2012) in his research, reported that around 63 per cent of respondents were aware of the agricultural crop insurance scheme, with a stigma score of 5.04 for the level of awareness showed a high level of awareness of agricultural insurance scheme among the rural farmers in the Kogi state, Nigeria. A total of 240 respondents from 8 communities were selected through a multistage random sampling technique. The major sources of information of agricultural insurance scheme to the farmers were cooperatives societies (65%) and extension agent (65%). Forty six per cent of individuals who were aware of the insurance system never utilized it, whereas 17 per cent had used it

previously. The major problems preventing the usage of agricultural insurance by the farmers in the state were fear of failure to honour agreement, high insurance premium, inadequate financial resources and non-coverage of many crops.

Mani *et al.* (2012) conducted a study in Tamil Nadu state on awareness of crop insurance scheme and to analyse the performance of national agricultural crop insurance scheme (NAIS) in three district of state with a sample size of ninety farmers. The study showed that the farmers who opted the NAIS scheme were not satisfied and they also expressed that technique accompanied in NAIS had been complex, the premium rate also varied from crop to crop and the yield estimated through crop cutting experiment which were very low as in comparison to actual yield. The study found that there had been lack of awareness of crop insurance in the sampled district.

Kumar (2013) in their study found that forty percent of farmers were aware and they were also insured crops and whereas other farmers who were aware about the crop insurance scheme did not opt the scheme that were 27 percent farmers. The farmers who insured crops or opted the scheme along the crop loan from their banks acted as a nodal agencies in delivering crop insurance and being the primary source of imparting the information on crop insurance to the farmers.

Pambo *et al.* (2014) in their paper on determinant of farmers awareness about crop insurance from trans-Nzoia, country Kenya reported that gender, education, income of the households were the main determinant of awareness. Systematic random sampling was used to reach 300 farmers. A simple ordinary least square (OLS) regression was estimated with awareness as a dependent variable with rest as explanatory variables and binomial logit model was employed in empirical analysis of the data. These end result suggested that providing policy insights on key regions of intervention with recognize to uptake of crop insurance in the country.

Nayak (2016) conducted a case study in Keohjar district of Odisha state on socio-economic profile and perception of farmers on crop insurance in Odisha state. Fifty farmers were selected for the study and sample consisted of marginal, small and large holding farmers. The data collected was analyzed by using percentages. The case study

revealed that most of the farmers were not aware about the crop insurance schemes/products and the risk mitigation measures of the government. The case study concluded that with the recommendation that there were a strong need to refine the existing crop insurance schemes for ensuring higher penetration of crop insurance within side the backward state of Odisha.

Nain *et al.* (2017) conducted a study in southern Haryana, and in study found that 60 per cent of farmers under the compulsory coverage of scheme and other for voluntary was adopted either by tenant farmers who were highly aware farmers about the crop coverage scheme and additionally aware of their low premium benefit of the scheme. They revealed that farmers awareness level concerning the agricultural insurance income was found lowest in terms of additives and sub-additives. Two method of data collection namely focused group discussion (FGD) followed by personal interview was adopted for the purpose. Total number of respondent selected were 100. The gender wise variation was also observed. Awareness of all the subject matter of agricultural insurance scheme was known by lesser percentage of farm women. The study major finding reported that the sincere effort were still required by government of India to make the crop insurance scheme more popularize among the mass.

Duhan and Dhingra (2018) conducted a study on association between the factors affecting awareness level of farmers about the crop insurance scheme in Haryana. Among the various indicators of awareness the data stated that 60 percent were having an idea about crop insurance and one percent availed crop insurance during study period of 2018, and 31 per cent having availed crop insurance in the past and only 15 percent farmers were in know about the implemented scheme in Haryana. There may be different factors which had been useful or hurdles with inside the awareness level of the farmers which include age, education, experience, income and category of farming. One or two factors mutually may play a vital function in increasing and decreasing the awareness level of the farmers.

Geetha and Thirumoorthy (2018) conducted a study in two district Erode and Namakkal of Tamil Nadu state on awareness of farmers towards crop insurance scheme. The data was collected from farmers cultivating sugarcane by using random sampling

approach with one hundred farmers. The results of the study showed that majority of the farmers came to know about crop insurance from their relatives and friends and most of the farmers were aware about the scheme with the volume of saving and capital accumulation. The farmers farm profits had been anticipated to undergo a high quality relationship. The statistical tools used in the study for analysis of data were percentage and weighted average rank. Authors encouraged for making use of for loans from the taking part bank to enhance their agricultural activities and productivity.

Rajaram and Chetana (2018) conducted a study on awareness level of crop insurance schemes and the factor influencing choice of information sources among farmers in Karnataka state. The study was conducted based on stratified multistage random sampling with 383 farmers and five block of Haveri district were selected for the study. The result showed that 86 percent farmers were aware of the crop coverage scheme and only 14 per cent farmers were not aware about the scheme of crop insurance. It was also observed in the study that farmers were unaware of market related information. They concluded that agriculture reforms are possible while we have got high quality infrastructures, education, R&D, technology, marketing and risk mitigation etc.

Santhi and Sangeetha (2018) conducted a study with the farmers of Coimbatore district in Tamil Nadu state. Comparision was made between the awareness on PMFBY crop coverage scheme among the insured and non-insured farmers. The study found that a high level of awareness of the PMFBY scheme was prevailing among farmers who had been included in the scheme while as in comparison to other farmers, with regard to awareness of farmers under PMFBY programme, the gender of the respondents, relatively male respondents, were having more awareness than female and non-farm income, number of family members supporting the respondents in farming resulted in significant with awareness level of insured farmers and found highly significant associated with awareness on PMFBY scheme. Farmers not covered under the scheme, the variables which significantly associated were age, education, family members support in farming activities. The statistical tool applied for the study were Kendall correlation coefficient and chi-square test.

Ghanghas (2018) conducted a study in Hisar district of Haryana state to assess the awareness of farmers on the subject of the PMFBY and suggested that majority of the farmers belonged to young age category that is 45 per cent followed by middle age, 32 per cent and 23 were in the category of old, as per the educational qualification of respondent 68 per cent were having 10+2 level of education and only 8 per cent were graduate and above. The study concluded that greater than 2/3rd of farmers were aware on general information as well as premium related information followed by seasonality 40 per cent and 34 per cent risk coverage related. The statistical tool applied for the analysis of data were frequency, percentage and overall percentage were used in their study.

Mukherjee and Pal (2019) conducted a study in Calcutta on improving the awareness about crop insurance in India. In their study they found that in sources of technical advice radio, television, newspaper were the major sources and higher financial inclusion does not help in improving awareness. The results were vigorously analysed after controlling for other possible confounding variables such as wealth, income, educational attainment, social institution of farmers and additionally locale-particular traits. The results suggested that strengthening agricultural extension services can be crucial aspects for enhancing awareness and in turn, coverage of crop insurance in India. Data from the national survey showed that lack of awareness one of the main reasons for not insuring crops.

Shinde *et al.* (2019) conducted a study in three district of Bundelkh and region of Madhya Pradesh about farmers awareness regarding the PMFBY. Blocks had been selected randomly and got information through financial institution accompanied with the aid of using KVK, gram sevak and agriculture department. The finding show that 60 farmers were aware about the PMFBY whereas only 39 per cent farmers were not aware about the scheme. Regarding the association between various independent variables and awareness about the PMFBY, it was found that age, education, mass-media exposure and contact with extension agencies were found to be negatively correlated with awareness of the PMFBY while scientific orientation was positively correlated with awareness of the PMFBY. The statistical analysis applied was the mean score and correlation coefficient 'r'.

Niranjan *et al.* (2019) carried out a study at Agro Economic Research Centre in Madhya Pradesh on insurance behaviour of insured farmers under the PMFBY in central India. More than 90 per cent were found to have listened approximately the scheme, out of which 80 per cent were found insured the PMFBY scheme. The major source of awareness was found television, newspaper, relatives and friends (>35%) followed by government awareness programmes (>20%) and insurance companies (>10%) major occasion of loss is yield loss. The statistical analysis applied were mean and standard deviation.

Wahabzada *et al.* (2019) conducted a study on analysis of awareness level of agricultural insurance among the stakeholder in Punjab. A random sample of 150 farmers were chosen for the study included 60 scientists of PAU, 30 extensionists and 60 progressive farmers. The study revealed that 68 per cent of PAU scientists, 43 percent extensionists and 38 per cent of progressive farmers were aware regarding the coverage of all farmers including sharecropper and tenant farmers under the PMFBY. And about the premium rate, 53 per cent extensionists were aware, 38 per cent scientists were aware and 40 per cent farmers were aware. The study showed that more than half of the progressive farmers were aware about the various aspects of the PMFBY. The factors which requires re-consideration are coverage of farmers, crops, weather perils covered, claims processing and compensation procedure.

Singh *et al.* (2020) conducted research in Hisar and Fatehabad District of Haryana state. They found in their research work, farmers' an awareness about agricultural development programs. Eighty-six per cent farmers were aware about the crop included by PMFBY followed by 72 per cent farmers had awareness about the premium paid for crop insurance and (89%) of had knowledge that PMFBY is compulsory for farmer on loan and they found that PMFBY is performing good that is degree of performance is 87 percent as compared to other rural advancement plans within the state. Only thirteen per cent of the farmers viewed that scheme is not performing so good. Total sample size randomly selected for their study was 100. The statistical measures like mean, frequency, percentage and rank order correlation had been used to research the facts.

Devi and Gupta (2020) conducted a study in Asothar, Bahua and Fatehpur block

of Kanpur, Uttar Pradesh. In their study, awareness and opinion of farmers concerning PMFBY, confirmed that forty six per cent of farmers were mindful almost the conspire about the scheme and when scheme was implemented in 2016 *kharif*, only 30 per cent farmers were aware about the scheme. Sample of 150 respondents had been decided on randomly. Majority of the respondents had been educated upto high school followed by intermediates and income was one lakh to one and half lakh. The finding of the study confirmed that maximum of the farmers opinion that they do not get compensation in time. Agriculture was the main occupation of the respondents. The statistical tool applied for the study were percentage, average, weighted mean, rank, standard deviation and correlation coefficient for the analysis of the data.

Santhi and Sangeetha (2020) conducted a study in Coimbatore district of Tamil Nadu on prediction of farmers' access to PMFBY scheme using discriminant evaluation. They found that Cronbach alpha test for data reliability resulted with 0.834 for loanee farmers and 0.892 for non-loanee farmers approximately the PMFBY crop coverage scheme. The primary data gathered had been analyzed through the descriptive statistics and inferential statistics namely factor analysis and discriminant analysis.

From the above review of literature on awareness of crop insurance schemes following conclusion are drawn:

- Mass media like television/newspaper and radio play a significant role not only in increasing the awareness level of farmers but also acts as a source of information regarding the crop insurance scheme among the farmers.
- Age, education, gender, farming experience and farm income of the farmers play significant role in increasing the awareness level of the farmers.
- Most of the studies showed that farmers are aware about the crop insurance scheme but do not know the details of the scheme.

2.2 Perceptions of Farmers about Crop Insurance Scheme

Goudappa *et al.* (2012) carried a study in North- Eastern parts of Karnataka on farmers perception and awareness about the crop insurance in Karnataka. The multistage

random sampling method was adopted in designing sampling frame for the study and ninety farmers were selected. He found that thirty per cent were fully aware about the scheme, sixty six per cent were partially aware about agriculture insurance and 12 per cent farmers were not aware about the agricultural crop insurance scheme and eighty four per cent major source of information for opting crop insurance were grameen bank. Majority of respondent wanted a quick settlement of claims settlements of claims which was usually taking more than one year.

Soni and Trivedi (2013) conducted a study in Anand district of Gujarat entitled, “an empirical study on awareness and perception, agriculture is universally associated with risk and uncertainty.” Crop insurance is one alternative for farmers to control the risk of crop loss. It aids within side the stabilization of farm productivity and income of the farmers. They concluded that majority of respondents were ready to opt the crop insurance but the crop insurance related agencies like banks and agricultural department etc, had to conduct more programmes to create awareness among farmers of the sample district and authorities needed to simplify procedure of National Agriculture Insurance Scheme (NAIS) to reach the every corner of the district.

Sundar and Ramakrishnan (2013) in their study found that, farmers perceived that crop coverage was suitable only for larger landholding farmers with high income. So, service providers were having to introduce a new product, which concentrates on financing crop losses in affordable premium to smaller and marginal farmers. The farmers were sensitive to premium rate, loss assessment and delays in claim payments so the service providers were having a focus on these important factors. Authors suggested that it helped the farmers to recover from bad agricultural years.

Fonta *et al.* (2014) in their study on farmers’ awareness and perception of climate hazards and their willingness to participate in crop insurance schemes in southwestern Faso. The end result of their study indicated that farmers were aware of climate hazards and perceive dry spells to be the topmost risk affecting the crop productivity especially during sowing, flowering and harvesting depending on the crop type. The study revealed that ninety per cent of sampled farmers were willing to insure maize, cotton and sorghum and less than thirty two per cent farmers had knowledge of what crop insurance.

Uvaneswaraan *et al.* (2014) conducted a study in Erode district of Tamil Nadu state among the one hundred fifty farmers to assess the farmers perception about the various facts of crop insurance schemes. They taken into account consideration that agriculture is the backbone of Indian economy. Government had launched several schemes like National Agricultural Insurance Scheme and weather based crop insurance scheme for protecting the farmers against risks in agriculture. Due to the risk of loss in agriculture the farmer had been making suicide attempts, selling their properties or the properties were seize by the banks and financial institutions for the loan availed by the farmers. This is due to lack of awareness about the risk management techniques among the farmers.

Kanagale *et al.* (2016) conducted a study in Amravati district of Andhra Pradesh state, to analyse the perception of farmers about crop insurance with a sample size of one hundred farmers. The study found that age, annual income, and family expenses had been significantly affecting the crop insurance decision and subsidiary occupation, crop covered, social participation had been having a positive impact on crop insurance. And their study suggested that majority of the farmers were not satisfied with the existing policies and guidelines of the crop coverage.

Afroz *et al.* (2017) conducted a study in Kedah of Malaysia on, “willing to pay for crop insurance to adopt flood risk by Malaysian farmers: an empirical investigation of Kedah by Malaysian rice farmers.” For the study 350 farm household had been selected and elicit facts from the respondents. In the survey, the perception of farmers about crop insurance were measured on five point Likert scale. The major source of information was financial institution and television. The results of the study indicated that the three aspect particularly higher premium designed for wealthy farmers, and one kind of tax are classified as major perception of farmers about crop insurance with the average score values of 4.65, 4.58 and 4.32, respectively. Age and farm size were found to be statistically significant with willingness to pay crop insurance by the farmers.

Sona and Muniraju (2018) in their study on crop insurance: Farmers perception and awareness- a study with special reference to Kodagu district Karnataka state. The study was descriptive in nature and sample size selected for the study was 50. The

sampled respondents were in the categories of small, marginal and larger land holding farmers cultivating all crops, majorly covering coffee and paddy in different seasons. The finding of the study showed that the farmer perceive that the crop insurance is mainly suited to larger holding farmers and its extent in risk sharing was very low and they also considered that the premium rate is not affordable by small and marginal farmers. Eighty per cent of farmers were not aware of extent of coverage, premium paid, procedure for insuring crop and method of loss determination.

Bhatnagar (2018) conducted a study in Udaipur district of Rajasthan, with the objectives of analyzing the awareness and perception of farmers towards crop insurance scheme which was introduced since 1972 and found that the farmers in the district were not ready to trust the fact that the crop insurance will reduce their risk. Major source of awareness was cooperative banks. They did not trust private participation. The farmers were not satisfied with procedures followed for enrollment as well as methods followed for loss assessment that was individual approach and area approach which were very limited in providing full amount of compensation for their lossess and they were also not ready to purchase crop insurance from private insurance companies due to lack of financial security. The farmers anticipated transparency within side the administration related to crop insurance and government companies to provide crop insurance services to them.

Kumbalp and Devaraju (2018) conducted a study in Kolar district of Karnataka state, which is a drought prone area of the country. The study was to analyze the perception of farmers about the crop insurance scheme which was implemented in Kolar district. They found that only 20 per cent farmers were aware about the scheme. The farmers who were aware and enrolled were satisfied with premium charged by insurance companies and services provided by the concerned agencies but they were not satisfied with indemnity level as well as the settlement procedures. Farmers awareness sources were mass media, television and radio etc. The farmers were expecting the government to increase the indemnity amount and settle the claim immediately. They also suggested that to create awareness through new programmes, to take necessary steps to cover all the crops under the present crop insurance scheme and to make crop insurance scheme

compulsory for all farmers to protect from agricultural hazards.

Roa (2020) conducted a study on farmers' perception and awareness about the agricultural insurance scheme in north Karnataka. The study is descriptive in nature and four district of north Karnataka region where maximum number of suicide cases of farmers are reported were selected for the study. The total sample size was 375. The study found that farmers were having a lot of faith in the PMFBY. They were having a strong confidence in the PMFBY that it was providing security against crop loss however, they opined that there was no provision in the policy for risk coverage for both *Kharif* and *rabi* seasons. Author also suggested that crop insurance should be delivered along with crop loan through banks. The agricultural department should conduct awareness programmes in collaboration with management educational institutes. This will not only help in creation of awareness but also educating farmers about crops insurance.

Kalimuthu and Sounder (2020) conducted a study on awareness and perceptions towards crop insurance scheme with special reference to Coimbatore district, Tamil Nadu. The research was conducted on one hundred twenty farmers. The level of satisfaction of farmers in crop insurance were neutral in Likert scale analysis, in the ranking analysis, "it provided relief fund at disaster time" was ranked first by the farmers. The major role in creating the awareness among farmers was played by the bank officials but they did not take active participation in explaining the benefits of crop insurance scheme. The statistical tool used for the analysis of data was percentage, Likert scale analysis and ranking analysis.

Jain *et al.* (2020) conducted a study in Sehore block of Sehore district of Madhya Pradesh. They found that profile characteristics namely education, size of land holding, experience in farming, annual income, extension contact, risks orientation and level of awareness regarding crop insurance, source of information, mass media exposure achievement motivation and economic motivation had significant association with perception of respondents regarding the PMFBY at 0.05% level of significance. And other variables namely age, caste and social participation of respondents did not have any significant association with the perception regarding the PMFBY. The statistical analysis

of collected data were quantified, coded and tabulated with the help of frequency, percentage and chi-square test.

Jothika and Rajasekaran (2020) in their study, conducted in Tirunelveli district of Tamil Nadu state, on contribution of farmers profile characteristics to perception of collective farming scheme which was implemented 2017-2018. The data was collected from one twenty selected farmers from four village by proportionate random sampling approach. The profile characters, social participation, training attendance and innovativeness had positively and significantly contributed to the perception while factor like gender, age, education, farming experience, family type and annual had contributed negatively. For better perception and adoption of collective farming scheme necessary measures can be taken so that the practices of collective farming can be improved. Logistic regression was performed to determine the contribution of 12 selected profile characteristics to the perception of collective farming and the results was interpreted.

From the above, review of literature of perceptions of farmers about crop insurance schemes, following conclusion can be drawn:

- In this most of the farmers perceived that crop insurance is suitable for larger land holding farmers with high income.
- Majority of the farmers' perception about crop insurance scheme is that it acts as a risk management tool.
- Farmers are not satisfied with crop insurance assessment of claim during crop loss.

2.3 Extent of Coverage of the Crop Insurance Scheme

Patwardhan and Narwade (2013) conducted study on Marathwada region of Maharashtra, India. In their study on role of agricultural coverage scheme in Maharashtra state, found that farmers covered under the National Agriculture Insurance Scheme (NAIS) in *Kharif* season increased at the rate of two per cent during the period of study in 2013. But the area covered and farmers benefitted declined by six per cent and four percent respectively in Maharashtra from 2000 to 2010. The farmers covered under the

NAIS in Marathwada in *kharif* season increased at the rate of 11 percent but area declined by two per cent during the period under study. In Marathwada claims paid were 11 per cent and farmers benefitted were nine per cent in *Kharif* season.

Bhushan and Kumar (2017) in their study on the PMFBY showed that the PMFBY had led to about a 30 percentage growth with inside the quantity increase of farmers who opted the scheme and area insured also increased by about sixteen per cent in *Kharif* 2016 as compared to *Kharif* 2015. They suggested that growing an agriculture intelligence facts gadget to accumulate and keep records on the entirely associated with agriculture coverage. Performance indicators have been average area insured per farmers and average sum insured per farmers and they also discussed various issues and challenges within side the implementation of the PMFBY like a few states did not no longer pay premium subsidy and did not no longer notify crops, loopholes of crop cutting experiment.

Mukherjee and Pal (2017) in their study found that agricultural household data and commented on the feasibility of reaching 50 percentage insurance of crop coverage through the PMFBY by 2018 by looking at the past performance of similar schemes. Their evaluation additionally confirmed that, seven per cent farmers were covered under crop coverage in 2012 and 2013 and the average growth rate of crop insurance adoption from 2010 to 2013 was six per cent. According to the government, however, twenty three per cent of farmers were covered under crop insurance in 2015-2016 and 2016-2017 the coverage of farmers was thirty percent. (The Economic Times 28 October, 2018) and around twenty four per cent farmers have been covered in 2018.

Cariappa and Lokesh (2019) study on revamping crop coverage in India: Empirical evidence from Karnataka and insights from abroad. In their study, in 2016 *kharif* when scheme was implemented in India the area coverage under the scheme was fifty-five mha during *Kharif* 2016 and had seen the highest area insured, farmers covered and benefitted in the history of crop insurance in India whereas country like China had three times (ninety-two mha) and USA had four times (121 mha) area under crop insurance as compared to India (30mha) in 2015. PMFBY has additionally reached a brand new high of increased gap between gross premium collected and claims paid

widening the brand new scheme from accomplishing to the farmers.

Nayak *et al.* (2020) study on, “agriculture insurances outreach constrained by procedural delays and norms: reflection from north Karnataka, India covered thousands stakeholders including farmers, official of banks, department of economic and statistics, representatives of gram panchayat, agriculture department, insurance agencies and co-operatives societies. Average percent of farmers covered under crop insurance coverage was changed into less than ten during 1995-2015, both for India and Karnataka. It changed into eleven per cent under National Agricultural Insurance Scheme (NAIS), in 2015. In *Kharif* increased to twelve per cent in 2016, seventy per cent in 2017 going down to fifteen per cent in 2018 and to fourteen per cent 2019 under the PMFBY in Karnataka.

Punia *et al.* (2021) studied the status of PMFBY in India, The study was based on secondary data like Ministry of Agriculture and Farmers Welfare, Government of India, Department of Agriculture and Statistical abstract of Haryana and India stat etc. Under the PMFBY from *Kharif* 2016 to *khariif*2017 there has been a significant increase in the number of gross premium twenty one per cent, claims paid sixty four per cent and farmers benefitted twenty nine per cent. The difference between gross premium and claim paid in the *khariif* season had abridged and indicated a divergence in the data on the payout of claims and profits made by private insurance companies. The new scheme revealed that overall area insured farmers covered were decreased over the years from *Kharif* 2016 to *Kharif* 2018. On the other hand, there had been a significant increase in the number of gross premium as forty five per cent.

From the above, review of literature related to extent of coverage of crop insurance schemes following conclusion is drawn:

- In the area of coverage of farmers under crop insurance schemes on an average growth rate has been in single digits.
- In 2016-17, coverage increased is 55 million ha which is subsequent years declined.

- Researchers are skeptical about the PMFBY reaching 50 per cent of area coverage and sustaining the initial buoyancy of 2016.

2.4 Limitations of the Crop Insurance Scheme

Mahul *et al.* (2012) in their working paper on improving the farmers access to agricultural insurance in India. The finding of their working paper revealed that the challenges confronted through the insured farmers of the National Agricultural Insurance Scheme were public financing, delay in claims settlements, lack of accuracy in crop cutting experiment, and basis risks like do not reflect the average true yield, formal contract form could be amended to incorporate information from other sources and insurance unit were reduced for example from the level of block reduced to village level.

Sinha and Tripathi (2016) conducted a study on assessing the challenges in successful implementation and adoption of crop insurance in Thailand. In their study they determined that one of the key challenges confronted through the Thailand farmers in adoption of crop coverage were user and provider confidence of products, reducing basic risk were key to addressing this challenges and expand the market for index-based insurance. Lack of reliable and actionable data were a key deterrent in development of sustainable insurance product line and creating perceptible value proposition and low compensation were also obstacles in crop insurance in Thailand.

Ashalatha and Prabhu (2018) study were conducted a study in Chamarjuna district of Karnataka state reported that the PMFBY will not be successful unless the policy makers change the method of settling the claims. The study identifies two major problem and these were: on-line registration and assessment of risk or settling of claims. Due to lack of awareness among the farmers the facility given by the Government of India with a sole objectives of supporting sustainable production in agricultural sector by providing financial support to farmers suffering from crop loss due to any natural calamities will not be achieved. The study also concluded that the poverty and indebtedness of the farmers of the district can be eradicated through this PMFBY scheme by inducing the growth of agriculture if the scheme is properly implemented.

Panigrahi *et al.* (2019) in their study on difficulties confronted through the rice growers of Bhadrak district of Odisha for subscription of PMFBY reported that during social constraints, majority of respondent confronted unfavorable attitude towards the scheme, in promotional confronted, majority of respondent have been having a lack of information concerning crop coverage scheme and in operational constraints majority of respondent reported greater time required for getting compensation, and within side the financial constraints, high premium rate accompanied by lengthy credit formality procedure, less compensation is offered credit assessment was low.

Mathur and Gupta (2019) conducted a study on, “Pradhan Mantri Fasal Bima Yojana and farm risk management: A study of Jammu district”. Focus group discussion with farmers from different blocks was also conducted and finally thematic analysis was used to analyze the data. The major problems faced by the farmers were delays in payment of insurance claims then followed by compulsory insurance, area based approach, illiteracy and lack of awareness, wrong estimation of actual yields and high premium rate.

Aheeyar *et al.* (2019) in their study on pilot evaluation of the index primarily based totally flood coverage in Bihar, India: lessons of experiences, conducted household survey using pre-tested questionnaire amongst a hundred and fifty five sample farmers in six villages. The issues confronted through the farmers were: now no longer receiving compensation accompanied by delayed payment and bribery involved.

Jamanal *et al.* (2019) conducted a study on constraints and suggestions expressed through the farmers in availing crop coverage schemes in Northern Karnataka. *Ex-post* research design was used with a random sample of two hundred and forty farmers of three block of Karnataka. The finding of the study show that constraints confronted through the insured farmers at the time as availing the benefit of the crop coverage scheme within side the order of priority were: i) delay in getting the claims settled ii) inadequate compensation as ranked iii) bias of officials in loss assessment as ranked iv) complex procedure ranked v) no compensation even when loss is on due to crop failure vi) compulsory nature of crop insurance scheme even though farmers were not interested. Garrets formula were used for converting rank into percentage.

From the above review of literature related to limitation of crop insurance schemes, following conclusion are drawn:

- The major constraints faced by the farmers were delay in payment of insurance claims.
- Compensation being low is also an obstacles in crop insurance.
- Lack of accuracy in the crop cutting experiment for assessing the crop lossess.

Chapter-III

Materials and Methods

CHAPTER-3

MATERIALS AND METHODS

This chapter deals with the detailed description of the research methodology adopted for conducting the study. The methods employed for conducting the study are elaborated under the following heads:

- 3.1 Research Design
- 3.2 Locale of the Study
- 3.3 Profile of the Study Area
- 3.4 Sampling Plan
- 3.5 Variables and their Measurement
- 3.6 Operational Definitions
- 3.7 Construction of Interview-Schedule
- 3.8 Data Collection
- 3.9 Statistical Analysis

3.1 Research Design

According to Kothari (2004) research design constitutes the blueprint or the roadmap for the collection, measurement, and analysis of data. Decisions regarding what, where, when, how much, by which means, concerning an enquiry or a research study constitute a research design. Research design can be considered as the structure of the research.

According to Creswell (2014) research design is the overall plan for conducting the research problems to the pertinent and achievable empirical research. It is the inquiry which provides specific direction for procedures in a research. The evaluation study was conducted using explorative with/without research design. The goal of the exploratory research is to formulate problems, clarify concepts and formulate hypothesis.

3.2 Locale of the Study

The study was carried out in Jammu district of Jammu and Kashmir (J&K) (Fig 3.1).

3.3 Profile of the Study Area

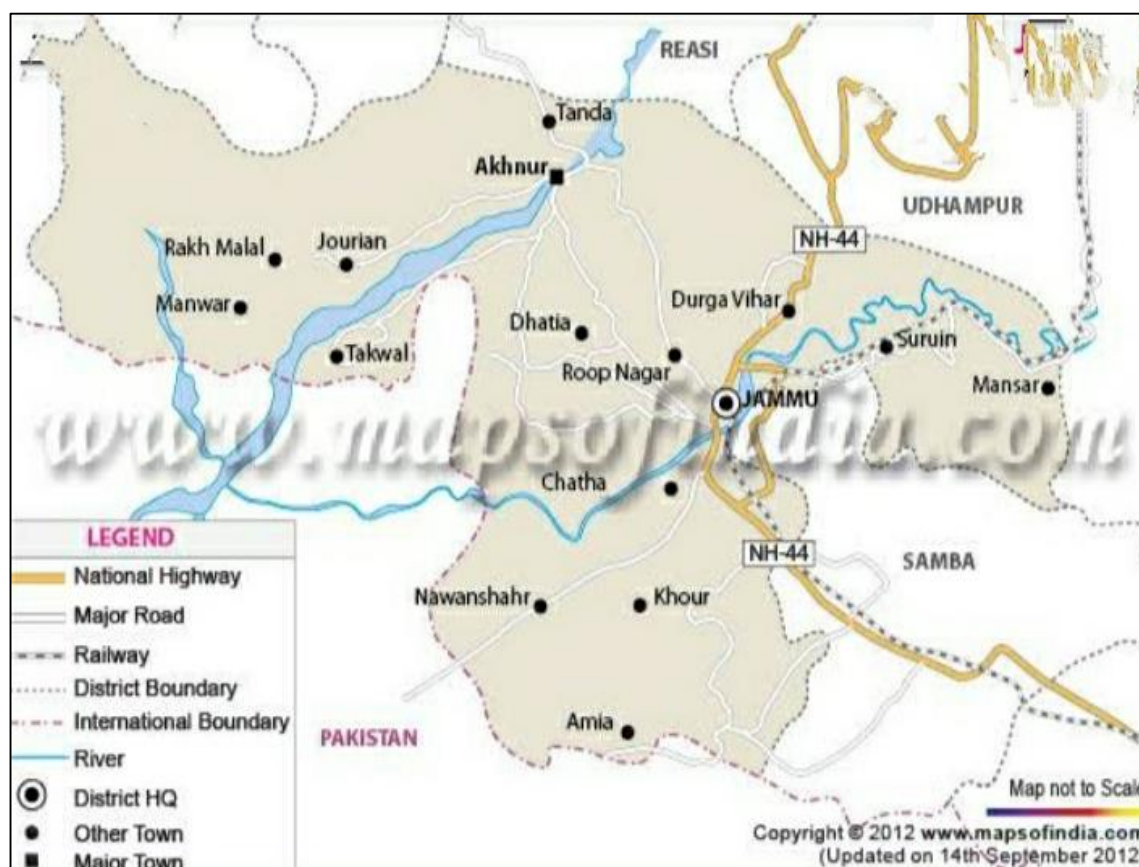


Fig. 3.1: Map of the Jammu district

The total geographical area of Jammu and Kashmir (J&K) is 422141 sq. kilometers. The sub-tropical region of Jammu province constitutes the entire Jammu district, part of Samba, Kathua, Udhampur and Rajouri districts. The climate of the region varies with altitude. Climate is hot summers, rainy monsoon and mildly cold winters. The normal annual rainfall of Jammu region is about 1100 mm, and average normal temperature ranges from 8.53 degree Celsius to 21.54 degree Celsius, Jammu district consists of seven sub-divisions and 21 tehsils and 21 blocks. The Jammu is situated between 32°73'0N latitude and 74°87'0E.

In 2011, Jammu district had population of 1,529,958 of which male and female were 813,821 and 716,137 respectively. Area of Jammu district is 2,342 sq. km and population density/km² in 2011 was 653. Total 47,745 cultivators are depended on agriculture farming and 16,414 people works in agricultural land as labor. According to 2011 census, average literacy was 83.45 per cent (Agriculture Production Department, J&K, 2019-2020).

3.4 Sampling Plan

In Jammu district, out of 21 blocks, multi-stage sampling technique was employed for selecting eight blocks.

3.4.1 Selection of blocks

One strata comprising of four blocks namely Akhnoor, Dansal, Nagrota and Bhalwal having maximum number of maize farmers enrolled for crop insurance in 2017-2018 were selected. These farmers were following maize- wheat cropping system. Second strata comprising of four blocks namely Bishnah, Khour, Marh and R.S Pura having maximum number of rice farmers enrolled for crop insurance in 2017-2018 were selected. This strata of farmers were following rice-wheat cropping system.

3.4.2 Selection of respondent

From each block a sample of 20 farmers having insured crop in 2017-2018 were drawn by random sampling method. Total sample size of farmers registered in the PMFBY was 160. Hence onwards these farmers will be called PMFBY farmers. From both selected strata, a matching sample of 40 control farmers were selected, 20 from each strata by convenient sampling method. Total sample size was 200(160 from treatment group and 40 from control group).

Table 3.1: Sampling plan for Jammu district

Total no of blocks selected	Name of the blocks	Name of the crops	No. of farmers selected from treatment group	No. of farmers selected from control group	Total sample size
8	Akhnoor	Maize/Wheat	20	5	25
	Dansal	Maize/Wheat	20	5	25
	Nagrota	Maize/Wheat	20	5	25
	Balwal	Maize/Wheat	20	5	25
	Khour	Rice/ Wheat	20	5	25
	Bishnah	Rice / Wheat	20	5	25
	Marh	Rice/ Wheat	20	5	25
	R.S Pura	Rice / Wheat	20	5	25
Total			160	40	200

3.5 Variable and their Measurement

Two types of variables were studied for the purpose of the study, dependent and independent variables. The list of dependent and independent variables selected is given in Table 3.2.

Table 3.2: List of dependent and independent variables selected for study

Dependent variable	Measurement
Awareness about PMFBY	‘1’ for aware, ‘0’ for otherwise
Perceptions about PMFBY	Three point continuum was used ‘2’ for agree ‘1’ for do not know ‘0’ for disagree
Limitations of PMFBY	It was measured in terms of the problems faced by the respondents in availing the benefits of the PMFBY
Extent of coverage of PMFBY	Area (ha) and farmers (no.) covered under the PMFBY

Independent variable	Measurement
Age	Chronological age of the respondents in years
Education	Number of years of formal schooling years completed
Family size	Number of members in a family
Gender	Male/female
Landholding	In hectares
Extension contacts	1 for contact 0 for no contact
Farming experience	No. of years
Occupation	1 for on-farm+ off-farm 0 for on-farm only
Distance of the household from the nearest market	Kilometers
Distance of the household from agriculture extension office	Kilometers
Source of information regarding PMFBY	Name of the source
Possession of kisan credit card	‘1’ for yes, ‘0’ for otherwise
Possession of mobile phone	‘1’ for yes, ‘0’ for otherwise
Financial inclusion with a bank	‘1’ for yes, ‘0’ for otherwise
Distance of the household from the nearest bank involved in PMFBY	Kilometers
Use of mobile for extension contact	‘1’ for contact, ‘0’ for otherwise
Use of mobile phone app for PMFBY	‘1’ for use, ‘0’ for no use

3.6 Operational Definition

3.6.1 Age

Age was operationalized as the chronological age of respondents expressed in completed years at the time of investigation. The respondents were grouped into three categories on the basis of their responses using cube root method modified by Singh (1975).

Categorization of respondents on the basis of their age as per Singh's cube root method.

Category	Age group
Young	20 to 40 years
Middle	41 to 60 years
Old	61 to 85 years

3.6.2 Education

It was measured in terms of the number of formal education completed by the respondent farmer at the time of interview and categorized into illiterate, primary, middle, matriculate, senior secondary (10+2) and graduate and above.

3.6.3 Family size

It was measured as the total number of members in a family including adults and children and was categorized by Singh's cube root method (1975) into 3 categories of 2 to 7 members, 8 to 11 members and 12 to 22 members.

Category	Members
Small	2-7 members
Medium	8-11 members
Large	12-22 members

3.6.4 Gender

It was measured in terms of the respondent being male or female.

3.6.5 Operational landholding

It refers to the number of hectares of land owned by the PMFBY and non-PMFBY farmers. The operational landholdings of farmers were categorized into:

Category	Operational landholding
Marginal	(<1 ha)
Small	(1-2 ha)
Semi-medium	(2-4 ha)
Medium	(4-10)
Large	(>10)

The categorisation of landholding is based on the categorisation by the Govt. of India, Ministry of Agriculture (MoA, 2011).

3.6.6 Extension contact

Different types of the sources of information used by the PMFBY and non-PMFBY farmers. It refers to contacts of the respondents with different extension personnel and extension agencies namely extension officer, progressive farmer and State Agricultural University/Krishi Vigyan Kendras (KVK). It was measured by awarding 1 score for extension contact and 0 for no extension contact.

3.6.7 Experience in farming

It was measured in terms of number of years a farmer practicing agriculture.

3.6.8 Main occupation

The main source of livelihood was considered as the main occupation of the respondent household. The respondent households were categorized into six categories with respect to percentage of the households belonging to a particular occupation. The PMFBY and non-PMFBY farmers were further classified into following categories of occupation.

The categories were on-farm and non-farm plus on-farm:

1. Crop production and dairying: on-farm

Sub- categories of non-farm included are:

1. Government employment
2. Retired with pensioners
3. Private employment
4. MGNREGA
5. Daily wagers
6. Casual labourers

3.6.9 Distance from market

It was measured in terms of distance of a household to the nearest market. It was measured in kilometers.

3.6.10 Distance from agriculture extension office

It was measured in term of distance from the respondent household to agriculture extension office. It was measured in kilometers.

3.6.11 Distance from nearest bank

It was measured in term of distance of the respondent household to nearest bank. It was measured in kilometers.

3.6.12 Source of information regarding PMFBY

It was measured in term of name of the sources of PMFBY as reported by the respondent farmers.

3.6.13 Possession of Kisan Credit Card (KCC)

It was measured in term of score “1” for having a KCC account and “0” for not having a KCC account.

3.6.14 Financial inclusion with banks

It was measured in term of farmers’ response and types of account a farmer was having: Jan-dhan account or saving account or both.

3.6.15 Possession of mobile phone/ landline

It was measured in term of score “1” for having a phone and “0” score for otherwise. In this three categories were made: smart phone, features phone, landline phone.

3.6.16 Use of mobile phone for extension contact

It was measured in terms of score “1” for use of mobile phone for extension contact and “0” score for not using of mobile phone for extension contact.

3.6.17 Use of mobile phone for PMFBY App

It was measured in terms of score “1” for use of mobile phone for PMFBY App and “0” score for not having PMFBY App.

3.6.18 Awareness about PMFBY

It was measured in terms of farmers’ response whether they possessed the information about the existence of Pradhan Mantri Fasal Bima Yojana and its modalities.

3.6.19 Perceptions

Perceptions is the way in which PMFBY is regarded, understood or interpreted and it was measured in terms of farmers responses on a set of items developed for the purpose on a three point continuum “Agree, Do not know and Disagree” with a ‘2’, ‘1’ and ‘0’ respectively. Overall perception index

$$\text{Perception index (PI)} = \frac{\text{Individual subject score}}{\text{Total score}} \times 100$$

3.6.20 Extent of coverage

It was measured with respect to the number of farmers, percentage and area (ha) insured under the PMFBY based on secondary data obtained from the Department of Agriculture, Jammu.

3.6.21 Limitations

It was measured in terms of the problems faced by the respondents in availing the benefits of the PMFBY.

3.7 Construction of Interview Schedule

An interview schedule was developed for data collection. It was constructed while keeping the objectives of the study in mind. It consisted of four parts:

1. Socio-demographic profile of the respondents
2. Awareness of farmers about the PMFBY
3. Perceptions of farmers about the PMFBY
4. Limitations reported by farmers about the PMFBY

3.8 Pre-testing of the Research Instruments

The research instrument was pre-tested with non-sampled 10 farmers/ respondents from a non-sampled village of Gagian and Chowhala of R.S Pura block for workability of the instrument and accordingly modifications were done in the final research instrument. The pre-testing of research instrument was done with the objectives to find out the

weaknesses and ambiguity in any part of the schedule, to remove the difficulties which were likely to come up during the actual data collection.

3.9 Data Collection

Data were collected from the selected respondents (PMFBY and non-PMFBY farmers) with the help of structured interview schedule by using the personal interview method (Appendix vii). The respondents were interviewed at their home, at community places or in their fields and their responses were recorded on the spot. The secondary data were collected from the Department of Agriculture and Farmers Welfare, Jammu Government of Jammu and Kashmir.

3.10 Statistical Analysis

After the collection of data from the respondents, the data were tabulated. In order to yield the relevant information in consistent with the objectives of the study, the data were analyzed with the help of suitable statistical measures such as frequencies, percentages, mean, standard deviation, correlation, perception index, kendall tau rank order correlation and binary logistic regression, computer based SPSS (Statistical Package for Social Sciences) 25.0 version software programme was used for applying different statistical tests. The statistical tests used in the study are explained below.

3.10.1 Percentage

Simple comparisons were made on the basis of percentage.

3.10.2 Arithmetic mean

It was obtained by dividing sum of values of observations by total number of observations.

$$\bar{X} = \Sigma X / n \text{----- (1)}$$

Where,

\bar{X} = Arithmetic mean

$\Sigma X = X_1 + X_2 + X_3 + \dots + X_n$

n = Total number of observations

3.10.3 Standard deviation

It is a statistics that measures the dispersion of a set of observations relative to its mean and is calculated as the square root of variance. It is denoted by σ

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1}} \quad \text{----- (2)}$$

Where,

σ = Sampled standard deviation

n = No. of observations

X_i = The observed values of a sample item

\bar{x} = The mean values of the observations

3.10.4 Singh cube root method

In 1975 Singh gave a method to categorize group data into various categories known as Singh's cube root method (equation-3) and gave a formula:

$$S_i = L_1 + \frac{\frac{iN}{3} - C_{i-1}}{f_1} \times h \quad \text{.....(3)}$$

Where,

I = Indicate category number ($I=1,2,3, n$)

S_i = Segment (e.g. I, II, III)

L_1 = Lower limit of the quartile class

C_{i-1} = Cumulative frequency of the class preceding to the quartile class

f = Frequency

h = Width of the quartile class

N = Total cumulative cube root of frequencies

3.10.5 Kendall tau rank order correlation

It is named after Maurice Kendall, who developed it in 1938. Kendall tau correlation coefficient is a coefficient that represents the degree of concordance between two columns of ranked data (equation-4)

$$\tau = \frac{n_c - n_d}{n(n-1)/2} \dots\dots\dots(4)$$

Where,

n_c = Number of concordant pairs

n_d = Number of discordant pairs

3.10.6 Perception index

Based on the scores the perception index was calculated using the formula (equation....5)

$$\text{Perception index (PI)} = \frac{\text{Individual subject score}}{\text{Total score}} \times 100 \dots\dots\dots (5)$$

3.10.7 Binary logistic regression

Binary logistic regression model was applied to identify the independent variables influencing the dependent variables. The result of this type of regression can be expressed as follows:

$$\ln [p/1-p] = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \dots\dots\dots b_kx_k \dots\dots\dots(6)$$

Where,

P = Represents the probability of an event

b_0 = Is the Y- intercept, and

x_1 to x_k represents the independent variables included in the model.



Plate 3.1: Data collection from PMFBY respondents.

Chapter-IV

Results

CHAPTER-4

RESULTS

This chapter deals with the empirical results of the study. The results are presented under the following headings:

- 4.1 Socio-personal and Economic Characteristics
- 4.2 Possession of Livestock
- 4.3 Sources of Income of Farm Household
- 4.4 Financial Inclusion
- 4.5 Extension Contact of Respondent Farmer
- 4.6 Use of Mobile Phone for PMFBY App
- 4.7 Awareness of Farmers About the PMFBY
- 4.8 Extent of Coverage of PMFBY
- 4.9 Limitations of the PMFBY
- 4.10 Perceptions of Farmers About the PMFBY

4.1 Socio-Personal and Economic Characteristics

The Socio-personal and economic characteristics of the PMFBY and non-PMFBY farmers are presented in Table 4.1.

4.1.1 Age

The finding of the study indicated that the average age of the respondents of PMFBY farmers was 52.06 years and that of non-PMFBY was 50.93 years, and a difference of 1.13. Majority of PMFBY farmers, 62 per cent were in the age group of 41-60 years and non-PMFBY respondents 55 per cent were in the age group of 41-60 years.

Table 4.1: Descriptive statistics of the sampled PMFBY and non-PMFBY farmers of Jammu district

Particular	PMFBY farmers (n=160)	Non-PMFBY farmers (n=40)	Difference
	1	2	(1-2)
Average age of respondents (Years)	52.06±11.147	50.93±14.460	1.13
Age group (%) farmers)			
20-40	15	23	8
41-60	62	55	7
61-80	23	22	1
Gender of respondents (%)			
Male	94	95	1
Female	6	5	1
Marital status of respondents (%)			
Married	96	90	6
Un-married	4	10	6
Mobile phones (% respondents)	96	100	21
Smart phone	32	48	16
Features phone	65	52	13
Landline phone	3	0	3
Social category (%households)			
General	65	85	20
Scheduled caste (SC)	11	13	2
Scheduled tribe (ST)	10	2	8
Other backward class (OBC)	14	0	14
Average education of the respondents (years)	7.83±3.883	9.38±4.678	1.55
Level of education (% respondents)			
Literate farmers (% respondents)	87	88	1
Education (% respondents)			
Illiterate	13	12	1
Primary	16	8	8
Middle	31	20	11
Matriculate	26	27	1
Senior secondary	9	15	6
Graduate and above	5	18	13

Average family size of farm-households (No.)	8.05±3.431	6.48±3.929	1.57
Family categorisation of farm-households (no.)			
Small family (1-7)	1	7	6
Medium family (8-11)	33	68	35
Large family(>12)	66	25	41
Average number of family members engaged in agriculture	3.30±2.828	2.05±1.70	1.25
Average farming experience of respondents farmers(years)	25.71±11.836	23.38±15.169	2.33
Farming experience group (% respondents)			
1-10	11	25	14
11-20	26	25	1
21-30	35	23	12
31-40	18	13	5
41-50	7	7	0
51-60	3	7	4
Average landholding of the respondents farmers (ha)	0.987±0.571	0.858±0.662	0.129
Landholding group (% households)			
Marginal (<1ha)	48	65	17
Small (1-2 ha)	50	30	20
Semi-medium (2-4ha)	2	5	3
Average distance of the household from the nearest market (km)	4.000±1.868	3.750±2.239	0.25
Agricultural extension office	8.41±2.025	4.1±1.9	4.31
Nearest bank involved in PMFBY	3.356±3.400	3.400±2.048	0.044
Ration card of respondent households (%)			
Above poverty line(APL)(NPHH/Ex)	78	92	14
Below poverty line/ priority household (BPL/PHH)	22	8	14
Social participation of respondents (%)			
Village panchayat	5	20	15

±Standard deviations, Figures corresponding to percentages have been rounded up to nearest whole number.

4.1.2 Gender

In PMFBY group, a high percentage of respondent farmers (94%) were male whereas only six per cent were female. In non-PMFBY group, a high percentage respondents (95%) were male and only five percent of respondents were female (Table 4.1).

4.1.3 Martial status

In PMFBY group, a high percentage of farmers (96%) were married and only four per cent of farmers were un-married. In non-PMFBY group, 90 per cent of respondents were married whereas only 10 per cent of respondents were un-married (Table 4.1).

4.1.4 Mobile phone

In PMFBY group, 96 percent of respondents were having a mobile phone in which majority, 64 per cent farmers were having features mobile phone followed by smart phone (32%) and landline phone (3%). Among non-PMFBY, farmers, 100 per cent were having mobile phones in which majority (52%) were having a feature mobile phone followed by smart phone (48%) (Table 4.1).

4.1.5 Social category

In the PMFBY group, a high percentage of farmers (65%) belonged to general category followed by other backward classes (OBC), (14%), scheduled caste (SC) (11%) and scheduled tribe (ST), (10%). In the non-PMFBY group, a high percentage of farmers (85%) belonged to general category followed by SC (13%), ST (2%) (Table 4.1).

4.1.6 Education

In PMFBY group, 87 per cent of respondent farmers were literate and among non-PMFBY, 88 per cent farmers were literate. In the PMFBY, the average education of respondents was 7.83 and that of non-PMFBY group, was 9.38, and the difference was 1.55 years. Maximum 31 per cent of respondents of the PMFBY belongs to middle level of education and that of non-PMFBY 27 per cent belongs to matriculate level of education (Table 4.1).

4.1.7 Family size

The study indicated that the average family size of respondent farm-households of the PMFBY group was 8.05 and that of non-PMFBY group was 6.48 and difference was 1.57 (Table 4.1).

4.1.8 Family categorization

In PMFBY group, majority of farmers (66%) belonged to large family (>7) followed by 33 per cent of farmers of medium family (4-7) and only one per cent of farmers of small family (1-3) and that of the non-PMFBY group, a majority of farmers (68%) belonged to medium family (4-7), followed by large family (>7) and seven percent of farmers to small family (1-3) (Table 4.1).

4.1.9 Family member engaged in agriculture

In PMFBY group, average number of family members of farm household engaged in agriculture was 3.30 and that of non-PMFBY farmers, average number engaged in agriculture was 2.05 and the difference was 1.25 (Table 4.1).

4.1.10 Farming experience

In PMFBY group, average farming experience of the respondent farmers was 25.71 and that of non-PMFBY farmers, was 23.38 and difference was 2.33. Majority, 35 per cent of respondent farmers of the PMFBY had farming experience (21-30) and that of non-PMFBY group, 25 per cent were having a farming experience between (11-20) and (21-30) belong to middle level of farming experience (Table 4.1).

4.1.11 Landholding

In PMFBY, average landholding of respondent farmers was 0.987 ha and that of non-PMFBY farmers, was 0.858 and difference was 0.129. Half of the respondents (50%) of respondents farmers of PMFBY group belonged to small landholding farmers followed by 48 per cent of marginal farmers (<1) and three percent of semi-medium farmers (2-4 ha). In non-PMFBY, 65 per cent belonged to marginal farmers followed by small farmers 30 per cent and five per cent of semi-medium farmers (Table 4.1).

4.1.12 Distance from the market

Average distance of the households from the nearest market in case of PMFBY farmers was 4 km and that of non-PMFBY farmers was 3 km and difference was 0.25 km (Table 4.1).

4.1.13 Distance from the agricultural extension office

Average distance of the PMFBY households from the agricultural extension office was 8.41 km and that of non-PMFBY was 4.1 km and difference was 4.31 km (Table 4.1).

4.1.14 Distance from the nearest bank

Average distance from the nearest bank of PMFBY households was 3.3 km and that of non-PMFBY was 3.4 km and difference was 0.04 km (Table 4.1).

4.1.15 Ration card

In PMFBY group, 78 percent households were having a ration card of above poverty line (APL) and 22 percent were having a priority household ration card (PHH) and that of non-PMFBY group, 92 per cent households were having a ration card of above poverty line/ non-priority household/ exclusively (APL/NPHH/EX) and eight per cent households were having a priority household (PHH) (Table 4.1).

4.1.16 Social participation

In PMFBY, five percent farmers were having a social participation in village panchayat and that of the non-PMFBY, 20 per cent were having a social participation in village panchayat (Table 4.1).

4.2 Possession of Livestock

The livestock possessed by the PMFBY and non-PMFBY farmers is given in Table 4.2. Majority of households (90%), possessed cows followed by goats and buffaloes in the PMFBY group. In the non-PMFBY group also majority (90%) possessed cows followed by goat, sheep and buffaloes. Fish pond and dairy farm were established

by only one percent of the PMFBY farm household whereas one percent non-PMFBY household had poultry and dairy farm (Table 4.2).

Table 4.2: Possession of livestock by the sampled PMFBY and non-PMFBY farm households (%farmers)

Livestock	PMFBY farmers (n=160)	Non-PMFBY farmers (n=40)
Cow	90	90
He-buffalo	4	1
She-buffalo	30	15
Goat	60	30
Sheep	35	17
Poultry	21	8
Horse	10	8
Any other	3	0
Fishery unit	1	0
Dairy unit	1	1
Poultry unit	0	1

*Multiple response; *Figures corresponding to percentages have been rounded up to nearest whole number.*

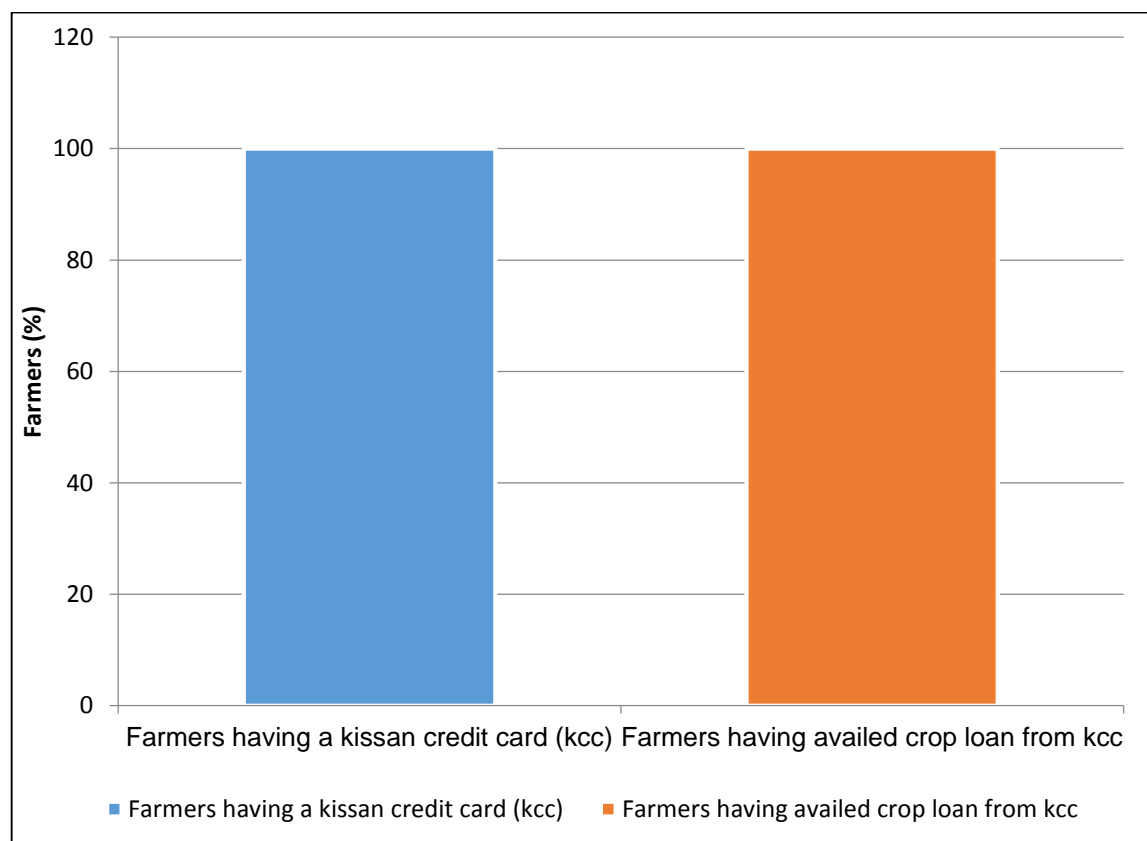
4.3 Sources of Income of farm Households

The sampled farmers of both the PMFBY and non-PMFBY groups were engaged in on-farm economic activities. The farmer of both the group were involved in crop production and were having livestock that contributed to on-farm income. Table 4.3 depicts the different sources of income of sampled farm household in the two group. The results show that only 12 per cent and 30 per cent farm household were exclusively dependent for their livelihood on farm income in PMFBY and non-PMFBY group respectively. Other non-farm economic activities of the sampled household were active government employment, retired government employment and private employment (Table 4.3). However, among the PMFBY group majority (61%) were in private sector employment and among the non-PMFBY, 30 per cent were in government employment and 38 per cent household had private employment income.

Table 4.3: Sources of income of the sampled farm households

Source of income	PMFBY farmers (n=160)		Non-PMFBY farmers (n=40)	
	No.	%	No.	%
Farm households having farm income	160	100	40	100
Farm households exclusively dependent on farm income	19	12	5	13
Farm households having non-farm income	141	88	35	87
Nonfarm employment income(government sector)	37	23	15	38
Active employment	30	19	12	30
Retired with pension	7	4	3	8
Non-farm employment income (private sector)	98	61	15	38
MGNREGA	2	1	1	2
Daily wagers	22	14	0	0
Casual labours	43	27	4	10

*Multiple response; *Figures corresponding to percentages have been rounded up to nearest whole number*

**Fig. 4.1: Possession of Kisan Credit Card (KCC)**

4.4 Financial Inclusion

All the farmers of the PMFBY group were having KCC and had availed the loan from the KCC (Fig 4.1). In the control group, only five percent of the farmers were having KCC and none of them had taken loan under KCC. More than 50 per cent of the farmers of the PMFBY group had Jan-dhan account and 63 per cent were having saving account in the bank. Whereas in the non-PMFBY group 47 percent farmers had Jan-dhan account and 57 per cent of the farmers had saving bank account (Fig 4.2).

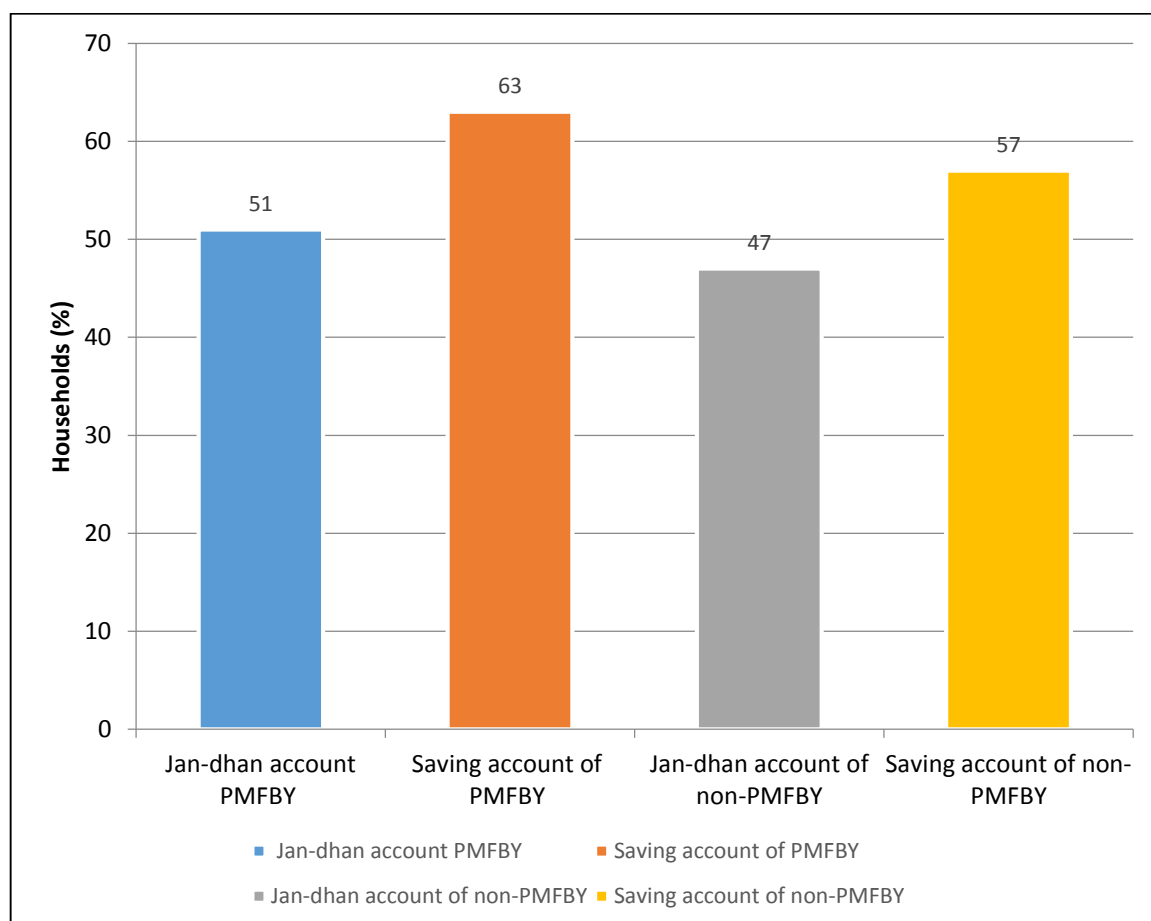


Fig. 4.2: Financial inclusion with bank

4.5 Extension Contact of Respondent Farmers

Table 4.4 depicts different types of extension contacts used by the PMFBY and non-PMFBY farmers of Jammu district. Majority, 77 percent of PMFBY farmers were having extension contact with the department of agriculture followed by KVK/SKUAST-Jammu (36%). Majority (73%) that of non-PMFBY farmers were having extension contact with department of agriculture, followed by KVK/SKUAST-Jammu (11%) (Table 4.4).

Twenty-three per cent of the PMFBY respondents using mobile phone for extension contact and 35 per cent that of the non-PMFBY farmers were using their mobile phone for extension contact (Table 4.4).

Table 4.4: Extension contact of the respondent farmers

Extension contact	PMFBY farmers (n=160) (%)	Non-PMFBY farmers (n=40) (%)	Difference (%)
	1	2	(1-2)
Krishi Vigyan Kendra (KVK) and SKUAST-J	36	11	25
Department of Agriculture	77	73	4
Use of mobile phone for extension contact	23	35	12

*Multiple response; *Figures corresponding to percentages have been rounded up to nearest whole number.*

4.6 Use of Mobile Phone for PMFBY App

The PMFBY farmers also used PMFBY app. However, only 33 per cent of farmers were using PMFBY app (Fig 4.3). The PMFBY farmers not using app of the schemes were either not well educated (22%) were illiterate. The other reason for not using the PMFBY app were; farmers not having smart phone (20%), farmers not aware about the PMFBY app (11%) and farmers not having the mobile phone (4%) (Table 4.5).

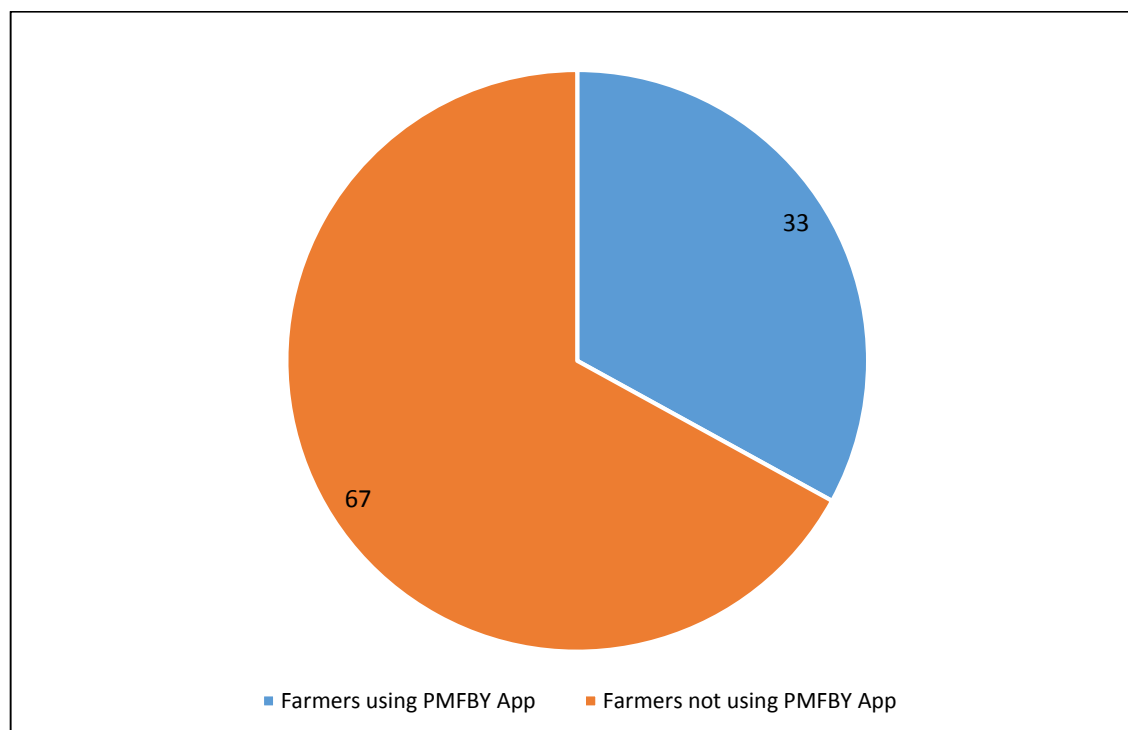


Fig. 4.3: Use of PMFBY App by the PMFBY farmers

Table 4.5: Reason for not using the PMFBY App(n=160)

Reasons for not using the PMFBY App	Percentage	Rank
Farmer have features phone	65	I
Farmer who are not well educated.	22	II
Farmers are not aware about PMFBY APP	11	III
Farmer who are illiterate	11	III
Farmer who do not have mobile phone	4	IV

*Multiple response; *Figures corresponding to percentages have been rounded up to nearest whole number.*

4.7 Awareness about the PMFBY

The sample of farmers drawn for the PMFBY group were aware about crop insurance. In 2017, 54 per cent of farmers reported having got the information about the PMFBY and 2018, 46 per cent of farmers became aware about the scheme (Fig 4.4). In the non-PMFBY group of farmers only 68 per cent of farmers were aware about the PMFBY and rate of awareness was 13 per cent each in 2017, 2018, 2019 and 30 percent in 2020 (Fig 4.5).

The farmers in the PMFBY group were aware about the rate of premium of the *kharif* and *rabi* crops and the awareness percentage was 100 per cent. However, only 18 percent of the PMFBY farmers were aware about premium of horticultural crops (Fig 4.6). Compare to the PMFBY farmers only 18 per cent and ten per cent were aware about rate of premium of *Kharif* and *rabi* crops respectively and none of them aware about the rate of premium about the horticultural crops (Fig 4.6).

Sources of information reported by the PMFBY farmers were Department of Agriculture Production and Farmers Welfare Department (47%) followed by television (20%), newspaper (14%) and other sources namely bank, internet, other farmers, village panchayat member and official of agricultural who was residing in one of the sampled village (Badyal Brahmana) (Table 4.6). In the control group of farmers, only eight per cent reported about the sources of information, though the overall awareness 68 percent (Table 4.6).

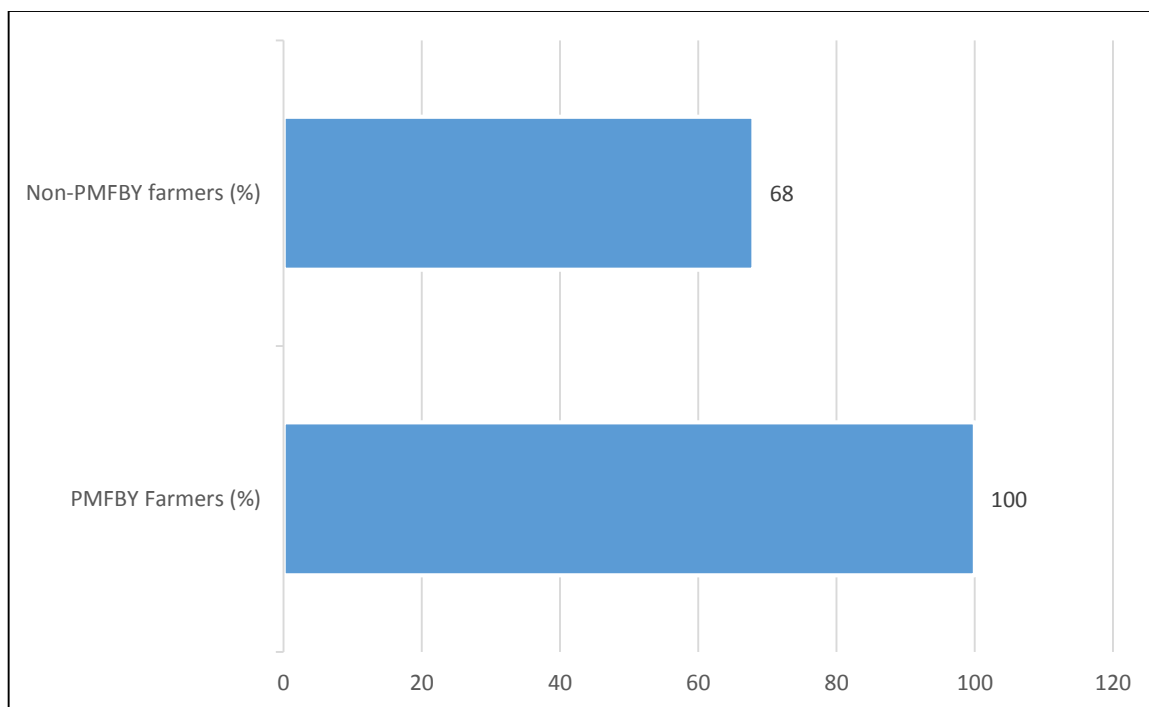


Fig. 4.4: Awareness of PMFBY and non- PMFBY farmers about the PMFBY

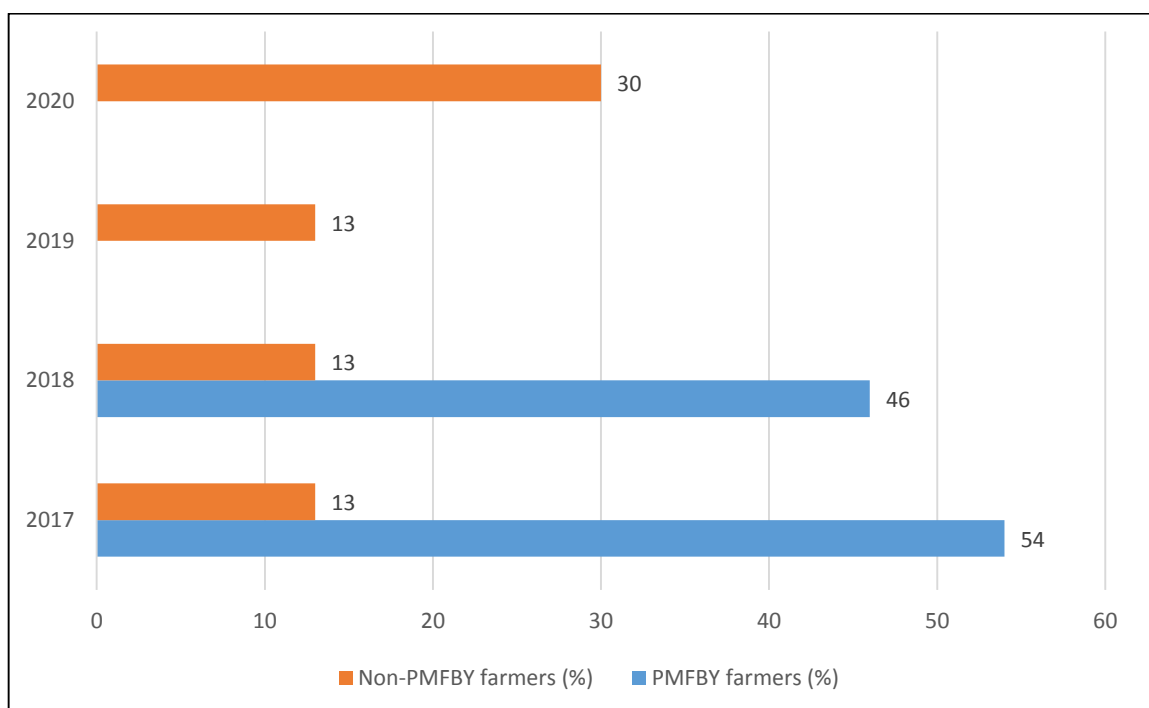


Fig. 4.5: Awareness year of PMFBY and non-PMFBY farmers about PMFBY Scheme

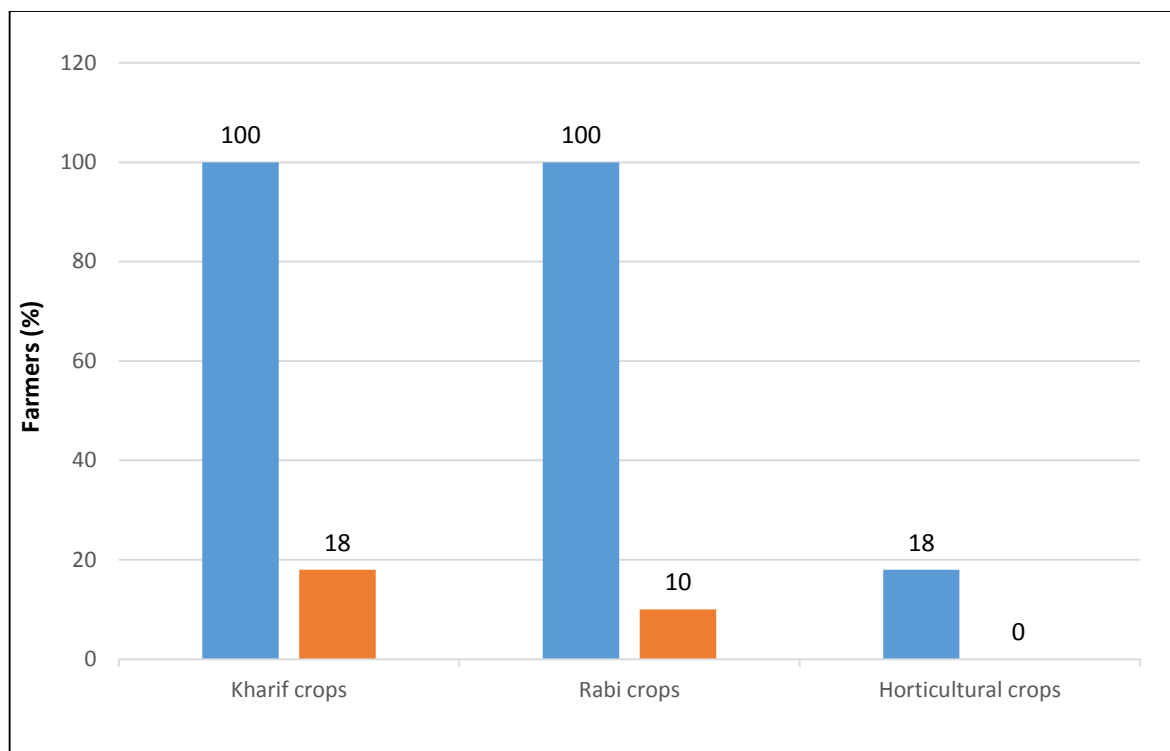


Fig. 4.6: Farmers awareness of the rate of premium

Table 4.6: Source of information of farmers about the PMFBY (%farmer)

Sources of information	PMFBY farmers	Non-PMFBY farmers
Newspaper	14	0
Television	20	5
Radio	2	0
Department of Agricultural and Farmers Welfare	47	3
Bank	3	0
Internet	4	0
Other farmers	2	0
Village panchayat member	3	0
Progressive farmer	1	0
Residing official of agriculture	4	0

*Multiple responses; *Figures corresponding to percentages have been rounded up to nearest whole number*

4.8 Extent of Coverage of PMFBY

In 2017-2018, the extent of coverage with respect to farmers was 4328, 14477 and 19537 in maize, paddy and wheat respectively, and 3616.60, 14554.3 and 18825.13 ha with respect to area in the same order (Table 4.7).

The number of loanee and non-loanee were 4232(maize), 14451(paddy) 19512 (wheat) and 96(maize) and 26(paddy) and 25(wheat) in 2017-2018. In 2018-19, the extent of coverage with respect to farmers was 13744(paddy), 4745(maize) and 18136(wheat) and crop area insured was 11949 ha, 3623.82 ha and 14110.74 ha in paddy, maize and wheat respectively.

Table 14.7 shows that after the first two years after the launching of the PMFBY, in 2019-20 and 2020-21, none of the farmers in Jammu district had insured their crops. The reasons provided for the non-implementation of the scheme by the Department of Agriculture were: i) extension not given to the agency involved in crop insurance, and ii) in 2020-21 because of non-finalisation of bid process.¹ This shows that proper planning for implementation of the scheme was lacking. The success in implementing the PMFBY in the initial years was squandered. However, after a lapse of two years, in 2021, 18654 rice farmers had insured their crop. The percent change from the base year of 2017 *khariif* was negative. The percent of farmers having insured their crop has decreased by 47.1, and the percent area has decreased between 2017 and 2021 (Table 4.8 and 4.9) The extent of coverage of crop insurance was 22.8% of the total rice acreage of Jammu district (63882 ha) and 25.1 % of total maize acreage (14430 ha) in 2017-18. In case of wheat, the crop insurance coverage in Jammu district was 26.3% of the total wheat area (79936 ha) in 2017-2018. After 100 percent negative growth rate in 2019-20 and 2020-21, the extent of coverage of the crop insurance scheme is only (12.3%) of the total acreage under maize and rice crops (78312 ha) in Jammu district.

¹ Email communication received from the PMBFY cell of the Department of Agriculture dated august 2021

Table 4.7: Extent of coverage of beneficiaries covered under the PMFBY

Year	Crop	Beneficiaries covered (no.)			Area insured (ha)		
		Loanee	NL	Total	Loanee	NL	Total
2017-18	Maize	4232	96	4328	3587.40	29.20	3616.60
	Paddy	14451	26	14477	14544.68	9.625	14554.31
	Wheat	19512	25	19537	18817.47	7.6626	18825.13
2018-19	Paddy	13744	100	13844	11483.04	10.96	11494.00
	Maize	4745	0	4745	3623.82	0.00	3623.82
	Wheat	18136	0	18136	14110.74	0.00	14110.74
Kharif2021	Paddy	18629	25	18654	9611	3	9614

Note: There was no crop insurance under the PMFBY in 2019-20 and 2020-21
 Loanee farmer: All farmers growing notified crops and availing seasonal agricultural operations loans from financial institutions i.e loanee farmers
 NL: Non-loanee farmer

Table 4.8: Extent of change covered under PMFBY over time (Number of farmers)

Type of insured farmers	Kharif			Rabi			% Change between kharif 2017 and 2021	% Change between rabi 2017-2018 and 2020-2021
	2017	2018	2021	2017-18	2018-2019	2020-2021		
	(1)	(2)	(3)	(4)	(5)	(6)	(3-1)	(6-4)
Loanee	18683	18489	18629	19512	18136	0	-0.3	-100.0
Non-loanee	122	100	25	25	0	0	-79.5	-100.0
Percent loanee	99.0	99.4	99.8	99.8	100.0	0	0.8	-
Total	18805	18589	18654	19537	18136	0	-0.8	-100

Note: There was no crop insurance under the PMFBY in 2019-20 and 2020-21

Table 4.9: Extent of area covered under the PMFBY over time (Area in ha)

Area (ha)	<i>Kharif</i> 2017	2018	2021	<i>Rabi</i> 2017-2018	2018-2019	2020-21	Change (%) between <i>kharif</i> 2017 and 2021 (%)	Change(%) between <i>rabi</i> 2017-18 and 2020-21
	1	2	3	4	5	6	(3-1)	(6-4)
Loanee	18132.08	15106.87	9611	18817.47	14110.74	0	-47.0	-100
Non-loanee	38.83	10.96	3	7.6626	0	0	-92.2	-100
Total	18170.91	15117.83	9614	18825.13	14110.74	0	-47.1	-100
Percent loanee	99.7	99.9	99.9	99.9	100	0	0.2	-100

Note: There was no crop insurance under the PMFBY in 2019-20 and 2020-21

4.8.1 Types of risk reported by the PMFBY farmers

The farmers insured the crops were also asked about the risk/natural calamities faced by them from time to time. Floods were the main natural calamity reported by 38 percent of the PMFBY farmers. The other calamities reported by the farmers were drought, unseasonal rains and post-harvest losses (Table 4.10).

The farmers whose crops were damaged due to natural calamities were 46 percent (Fig 4.7).

Table 4.10: Types of risk reported by the sampled PMFBY farmers during crop loss (n=160)

Category	Farmers (%)
Flood	38
Rainfall in standing crop	6
Un-seasonal rain	4
High wind speed	3
Drought	1
Post- harvest loss (cut and spread condition)	1

*Multiple response; *Figures corresponding to percentages have been rounded up to nearest whole number*

4.9 Limitations for Non-adoption of the PMFBY by the control group farmers

In the control group, the farmers were asked the limitations for not insuring their crops under PMFBY, the major limitations stated were: i) lack of awareness about the schemes (30%) and ii) that PMFBY was beneficial only to larger holding farmers (30%) (Table 4.11). The other limitations listed by the control group, of farmers were regarding all types of risks not covered under the scheme, farmers did not having knowledge about the details of the scheme and the farmers of particular area not having risk of calamities (Table 4.11).

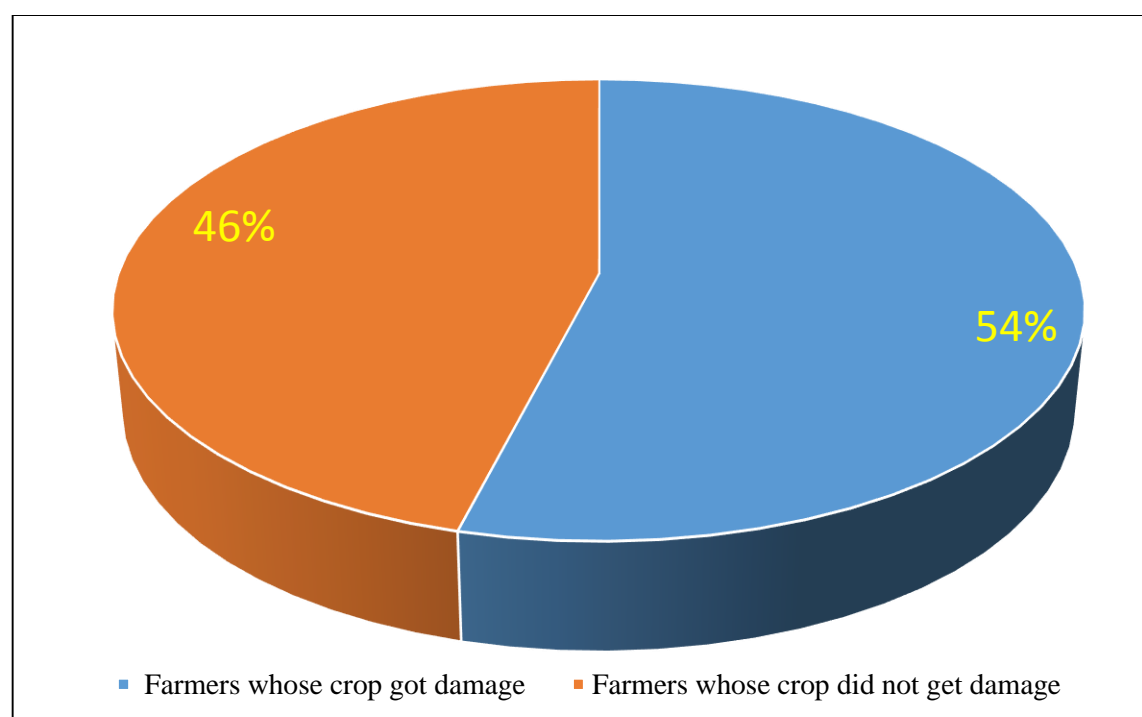


Fig. 4.7: PMFBY farmers according to crop damage

Table 4.11: Limitations for non-adoption of PMFBY by the control group farmers (n=40)

Limitations	Farmers* (%)	Rank
Farmers were not aware about the PMFBY	32	I
PMFBY were beneficial only to larger farmers	30	II
Farmers were not having full knowledge about the PMFBY	22	III
All kinds of risk were not covered under the PMFBY	18	IV
There were no risk calamities in his area due to natural cause	5	V

*Multiple response; *Figures corresponding to percentages have been rounded up to nearest whole number*

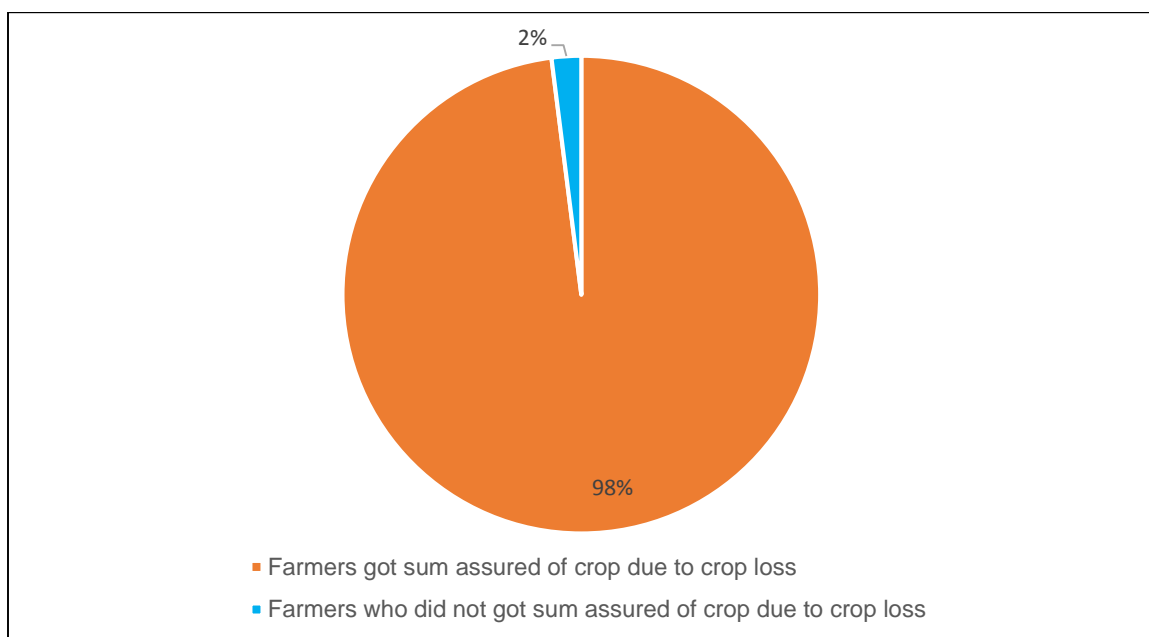


Fig. 4.8 PMFBY farmers getting sum assured of crop due to crop loss

4.9.1 Association of independent variable with independent variables

Association of independent variable with adoption of the PMFBY is given in Table 4.12 Sixteen independent variables namely age, literacy, level of education, landholding(ha), farming experience (years), average family size (no.), agriculture as sources of income, government employment, private employment, shop keeping, MGNREGA, number of source of income, possession of KCC, Jan-dhan account,

distance from market (km) and distance from bank (km) and their association with farmers had adopted PMFBY and was found out by Kendall tau rank order correlation coefficient (Table 4.12). The variables having negative significant correlation.($P < 0.05$) were level of education, government job, shop-keeping, MGNREGA, family size, private job, KCC holder and number of source of income etc($P < 0.05$). Out of these family size and agriculture is the main source of income and employment of private sector and possession of KCC positively correlation with the dependent variables i.e. adoption of PMFBY and farmers working in MGNREGA and level of education had negative correlation (Table 4.12). This shows that the farmers who had low level of education and therefore working in MGNREGA did not opt for the PMFBY.

The binary logistic regression was also run to find out the independent variables affecting adoption of the PMFBY. The model was not significant and estimation of -2 log likelihood got terminated because of iteration (because parameter estimator change less 0.001%. Besides chi-square (1.172) and ($p = 0.997$) value of the model was not significant. Therefore we could not identify the variables affecting the adoption of PMFBY.

Table 4.12: Association of independent variables with the dependent variable adoption of PMFBY

Variable	r statistics	p-value
Age (years)	0.012	0.837
Literate (No.)	0.014	0.839
Level of education(No.)	-0.152*	0.015
Landholding(ha)	0.104	0.080
Farming experience (No. of years)	0.086	0.155
Average family size (No.)	0.251**	0.000
Agriculture as main source of income	0.187**	0.008
Govt. employment (No.)	-0.103	0.148
Private employment (No.)	0.172**	0.015
Shop keeping (No.)	-0.099	0.164
MGNREGA (No.)	-0.196**	0.006
No. of source of income	0.167*	0.014
Kisan credit card (KCC holder)	0.953**	0.000
Jan- dhan, account	0.045	0.526
Distance from market(Km)	0.071	0.254
Distance from bank(Km)	0.041	0.511

Correlation is significant $P \leq 0.05$ level. Correlation significant at the ** $P \leq 0.01$ level*

4.10 Perception of farmers about the PMFBY

Perception of the farmers having insured their crop under the PMFBY was measured on 3 point continuum on a set of seven statements has detail given below in Table 4.13. Predominantly the farmers perceived the scheme to support during crop loss (86%) but on the other hand, 53 percent of farmers reported that compensation was less as compared to actual loss and the procedure for availing the compensation is lengthy (51%). About one fourth of farmers' perceived perception was that the scheme is not actually benefitted to the farmers, besides premium being high was reported by seven percent of the farmers and there should be area approach rather than individual assessment approach (Table 4.13). Though 33 per cent disagree that compensation is less, 35 percent perceived that procedure is not lengthy and 12 percent disagree that there should individual assessment of the crop loss rather than area approach. Despite this, the perception that the PMFBY provides financial support during crop loss had a perception index of 0.93, whereas on other items of perception, index range between 0.30 and 0.61. The overall perception of the PMFBY farmers was also neither positive nor negative as the perception index was 0.50, which is neutral.

Table 4.13: Perception of farmers about the PMFBY (% farmers) n=160

Statement	Agree (%)	Disagree (%)	Do not know (%)	Perception index (PI)
Financial support during crop loss	86	14	0	0.93
There is area approach, it should be individual assessment	2	86	12	0.45
Compensation is less as compared to actual loss	53	14	33	0.60
Premium amount is high	7	92	1	0.53
There is lengthy procedure for availing compensation	51	14	35	0.58
There should be involvement of private insurance companies for better coverage	6	48	46	0.30
PMFBY is not benefitting farmers	24	75	1	0.61
Overall perception index				0.50

Figures corresponding to percentages have been rounded up to nearest whole number

Chapter-V

Discussion

CHAPTER-5

DISCUSSION

The findings of the present study are discussed in this chapter under the following headings:

- 5.1 Profile of the Respondents
- 5.2 Awareness of Farmers About PMFBY
- 5.3 Perceptions of Farmers About PMFBY
- 5.4 Extent of Coverage
- 5.5 Limitations of PMFBY

5.1 Profile of the Respondents

Results revealed that, majority of the PMFBY group of farmers, were literate possessing kisan credit card (KCC), having non-farm sources of income, either having Jan-Dhan account saving bank account and belong to small land-holding category of farmers. This shows that farmers having opted for the PMFBY are predominantly small, marginal land holding farmers and have financial inclusion with the banks and possessing KCC.

The socio-personal economic variables having positive association with the farmers adopting the PMFBY were: family size, agriculture as a main source of income, private job, number of source of income and (KCC). The empirical evidences also shows that education, family size and income have positive association with the farmers opting for crop insurance (Devi and Gupta, 2020; Santhi and Sangeetha, 2018).

5.2 Awareness of Farmers about PMFBY

The study analyzed the awareness of the farmers about the PMFBY. In the non-PMFBY group, 68 percent farmers were aware about the schemes. It was 13 percent, each in 2017, 2018 and 2019. This shows that the non-PMFBY group, of the farmers

were not aware about the scheme and had not insured their crops under PMFBY. Other studies have also highlighted lack of awareness about the PMFBY scheme (Shinde *et al.* 2019; Wahabzada *et al.* 2019; Duhan and Dingra 2018). The major source of information for the PMFBY farmers was Department of Agriculture, followed by television. Mukherjee and Pal (2019) reported that mass media was the main source of creating awareness. The lack of awareness among the non-PMFBY farmers was the major reason for their non-adoption of the PMFBY scheme. The more need to be done with extension by Department of Agriculture utilizing mass-media for creating awareness about the PMFBY and its modalities. Shinde *et al.* (2019) analyse the factor associated with awareness of the farmers about PMFBY and found that age, education, mass-media exposure and extension agency contact were negatively correlated, whereas (Santhi and Sangeetha, 2018) found that age, education, family member in farming were positively associated with awareness and adoption of the PMFBY. Further studies need to be conducted to find out the factors associated and affecting the awareness

5.3 Perception of Farmers about the PMFBY

Perceptions of farmers towards crop insurance schemes have been studied by the many scholars (Roa, 2020; Jain *et al.* 2020; Nayak. 2016 and many others). The PMFBY farmers perception index towards the PMFBY scheme was 0.50 which is neutral. The PMFBY farmers perception was that compensation is less compared to actual loss and procedure for compensation is lengthy, which is contrary to finding of Roa, (2020) and Kangale *et al.* (2016) but in agreement with Jain *et al.* (2020). This shows that for creating a positive perception towards the PMFBY and its modalities the implementing agency should explained the details of the schemes at the time of insuring the crop of a farmers under PMFBY.

5.4 Extent of Coverage

In India, the reach of crop insurance scheme is modest at 7 percent of farm household and the failure was attributed to design of these schemes and lack of awareness of the scheme about the crop insurance schemes (Rajeev and Nagendran, 2019). Though the PMFBY addressed the issue of reducing the insurance premium and included more

crops and risk factors, however the scheme did not reach its own target of 50% coverage (Rajeev and Nagendran, 2019). This study also shows that despite good progress made under the PMFBY in 2017-18 by covering area of 18170.91 in and 18825.13 in *rabi* which is 22.8% of Jammu district. The area coverage in 2017-18 for *Kharif* and *rabi* crops ranged between 22.8% and 25.1%. The results of the study are on the same lines as reported by Rajeev and Nagendran 2019. In subsequent years of 2019-20 and 2020-21, it dipped to zero percent thus reflecting poorly on the planning and implementation of the scheme. Much needs to be done to address the bottlenecks in guidelines and implementation of the scheme to overcome negative perceptions of the farmers as highlighted in empirical studies.

5.6 Limitations of the PMFBY

Limitations were measured in terms of the problems faced by the respondents in adopting and availing the benefits under the PMFBY. The empirical studies have reflected that delayed in payment of insurance claim (Mathur and Gupta 2019), not receiving compensation and bribery, delay payment (Ahyeer *et al.* 2019), bias in official in loss assessment (Jamanal *et al.* 2019) inadequate compensation (Jamanal *et al.* 2019) are the limitations of the PMFBY implementation. The limitations reported by Rajeev and Nagendran (2019) about the implementation were: the design of the crop insurance schemes and low level of awareness. This study also found that lack of awareness among non KCC farmers was one of the major limitations of the scheme. The PMFBY came to a halt in Jammu after the first two years after launching. In 2019-20 and 2020-21 none of the farmers in Jammu district were insured under the PMFBY thus reflecting poorly on the planning and implementation of the scheme. In this study, the control group farmers stated lack of awareness about the schemes, the PMFBY being beneficial only to larger holding farmers though this is not factually correct as 98 per cent of the farmers insured under the PMFBY were marginal (48%) and small (50%) farmers. Besides, farmers not having knowledge about the details of the scheme and all types of risks not covered under the scheme are other constraints reported by the farmers. Further the farmers' perceived perception was neutral neither favourable nor unfavourable and was one of the major limitation of the scheme. Premium being high, compensation was less compared to actual

loss and the procedure for availing the compensation was lengthy and there should be area approach rather than individual assessment approach were the limitations of the PMFBY reported by the farmers.

Chapter-VI

Summary and Conclusions

CHAPTER-6

SUMMARY AND CONCLUSION

6.1 Introduction

Crop insurance is a means of protecting the farmers against the uncertainties of crop yields arising out of practically all natural factors beyond their control, and it is the only way to cover this risks in agriculture, that may arise in the future. By realizing the limitation of the previous crop insurance schemes, the Government of India launched new crop insurance scheme namely Pradhan Mantri Fasal Bima Yojana (Prime Minister Crop Insurance Scheme) in 2016. In this scheme, the premium rate is 2 percent of the actual sum assured amount for *kharif* season crops to be paid by the farmers and 1.5 percent of the total sum assured for *rabi* season crops for farmers and annual commercial and horticultural crops is 5 percent to be paid by the farmers. The PMFBY crop insurance is in force in Jammu & Kashmir since 2016. The empirical studies have been conducted to evaluate the scheme in many states namely Assam, West Bengal, Ahmadabad, Maharashtra, Karnataka, Haryana, and Madhya Pradesh. No such studies have been conducted in J&K to evaluate the scheme. Therefore, an empirical study entitled “**Evaluation of the Pradhan Mantri Fasal Bima Yojana in Jammu District**” was conducted in Jammu district.

6.2 Objectives of the Study

1. To study the farmer awareness and perceptions about PMFBY
2. To study the limitations of PMFBY
3. To study the extent of coverage of PMFBY

6.3 Material and Methods

Two strata of rice- wheat and maize- wheat were identified from the list of farmers covered under the PMFBY. From each strata four blocks each having maximum farmers enrolled under PMFBY 2017-2018 under rice-wheat and maize-wheat. The

blocks selected under maize-wheat namely Akhnoor, Balwal, Dansal and Nagrota and for rice-wheat namely Bishnah, Khour, Marh and R.S Pura were selected, respectively.

From the list of the farmers, 20 farmers each selected randomly from each block. The total sample of the PMFBY group was 160 farmers. Five farmers each from the same blocks and in the vicinity of the PMFBY farmers sample were selected by convenient sampling method. Therefore the total sample was 200 farmers (160 PMFBY farmers and 40 from non-PMFBY) were selected for the study. The data was collected in face-to-face interview on a structured interview schedule. The data was analyzed using computer based SPSS (Statistical Package for Social Sciences) 25.0 version software programme.

6.4 Major Findings

6.4.1 Socio-personal and economic characteristics

Majority of the respondent of the PMFBY group and the non-PMFBY group from Jammu district were male (95%), literate (86%) and in the age group of 41-60 years (62%). Farming experience of the PMFBY and the non-PMFBY farmers ranged between 20-30 years. The average landholding of the respondent PMFBY farmers was 0.99 ha and that of non-PMFBY farmers was 0.86 ha. The average family size of PMFBY farmers was large (83%). The average number of family members in PMFBY groups engaged in agriculture were three, however in case of the non-PMFBY farmers it were two. The sources of income for sampled households was both on-farm & non-farm.

6.4.2 Awareness of farmers about the PMFBY

In the PMFBY group, all farmers were aware about the scheme. However, in the non-PMFBY group 68 per cent of farmers became aware about the scheme and rate of awareness was in 2017, 13 per cent in 2017, 2018, 2019 and 30 percent were aware in 2020 were aware about the scheme. In the PMFBY group, 100 per cent farmers were aware about the rate of premium of the *kharif* crops, 100 per cent farmers were also aware about the rate of premium of the *rabi* crops and in case of horticultural crops only 18 per cent of farmers were aware about the rate of premium of the PMFBY. However in case of the non-PMFBY group, 18 per cent farmers were aware about the rate of

premium of *Kharif* crops and ten percent were aware about *rabi* crops. Major source of information of farmers about the PMFBY was Department of Agriculture Production and Farmers Welfare i.e. 47 per cent. Major reason for non-adoption of the PMFBY crop insurance by the non-PMFBY farmers was that they perceived the scheme not being beneficial to small holding farmers.

6.4.3 Extent of Coverage

In 2017-18 the extent of crop insurance under the PMFBY was 4328, 14477 and 19537 with respect to maize, paddy and wheat farmers, respectively with total area of 3616.60 (maize), 14554.3 (paddy) and 18825.13 (wheat). However, in 2019-20 and 2020-2021, there were no farmers insured under the scheme, in 2019-2020 and 2020-2021 and in 2021-2022 the PMFBY was revived in *Kharif* 2021. The major factor correlated with the adoption of the PMFBY was level of education, average family size, agriculture as a main source of income, private employment as a source of income, MGNREGA, number of source of income and (KCC), which were positively and negatively. Factors affecting adoption were also modelled by running binary logistic regression. However, the model was not significant and estimation of -2 log likelihood got terminated because of iteration change less 0.001%. Besides chi-square (1.172) and (p=0.997) value of the model was not significant. Therefore, we could not identify the variables affecting the adoption of the PMFBY.

6.4.4 Perceptions of farmers about PMFBY

The overall perception index of the PMFBY farmers was 0.50 which is neither favorable and nor unfavorable. Positive perception about PMFBY is that it provides financial support during crop loss (PI, 0.93), followed by medium level of perception about PMFBY, that is PMFBY perceived to be not benefitting to farmers (PI=0.61), compensation being less compared to actual loss (PI=0.60), lengthy procedures for availing compensation (PI=0.58) premium amount being high (PI=0.53), The farmers suggested that instead of area approach, it should be individual assessment (PI=0.45), and the weakest level of perception about the PMFBY was that, there should be involvement of private insurance companies for better coverage (p=0.30).

6.5 Conclusions

- Majority of farmers in both the PMFBY group, and the non-PMFBY group, were marginal and small landholding 88 percent and having a non-farm sources of income. Therefore, the farmers perceived perception that the PMFBY is meant for large holding farmers is not correct. This wrong perception needs to be removed by the implementing agencies.
- Compared to the PMFBY farmers, only five percent of the non-PMFBY farmers have (KCC) and this could be the main reasons for non-PMFBY not getting their crop insured. This is also reflected by the fact that the non-PMFBY farmers were having lesser financial inclusion (banks accounts) compared to the PMFBY farmers.
- The area coverage in 2017-18 for *Kharif* and *rabi* crops ranged was between 22.8 per cent and 25.1 per cent, which is 22.8 percent of acreage under rice, maize and wheat in Jammu district area.
- Though the PMFBY addressed the issue of reducing the insurance premium and included more crops and risk factors, however the scheme did not reach its own target of 50% coverage.
- Overall perception index was 0.50 toward the PMFBY. Government needs to popularize the scheme for scaling out and removing the negative perceived perception of the farmers.
- Level of education, government job, shop-keeping and MGNREGA were negatively correlated whereas average family size, private job, kisan credit card (KCC) holder and number of source of income are positively correlated independent variables having significant association with dependent variables.
- However when the independent variable having significant association with the dependent variable were entered in binary logistic model the model was not significant despite level of education, government job, shop-keeping,

MGNREGA, family size, private job, kisan credit card (KCC) holder and number of source of income independent variables having significant association with the dependent variable.

6.6 Recommendations

On the basis of present study, a few recommendations are put forward for the agencies and departments that are involved in implementation and smooth functioning of the PMFBY:

- Authorities should consider different risk factors such as crop devastation by wild animals, under the PMFBY for safeguarding farmers from these kinds of losses. The loss due to border firing may also be covered in the scheme.
- For creating a positive perception towards the PMFBY and its modalities, the implementing agency should explained the details of the schemes at the time of insuring the crop of a farmer under the PMFBY.
- Proper up to date information about the crop insurance schemes should be provides to the farmers by the concerned authorities. The information should be in published in English/ Hindi or regional languages.
- The insurance agents should be recruited at the cluster level or circle level, so that they help in providing information and guide farmers about crop insurance.
- In order to maximize the benefits of the Pradhan Mantri Fasal Bima Yojana, much needs to be done for creating awareness knowledge. Wide publicity be made through electronic and print media.
- Comprehensive study with larger sample and using random sampling technique should be conducted to find out the adoption of the PMFBY in the J&K, the factors impacting the success and failure of the scheme and impacts of the adoption or non-adoption of the PMFBY scheme.
- The coverage area of PMFBY should be expanded and cash crops namely vegetables, floriculture, mushroom, strawberry crops also comes under the umbrella of PMFBY.



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Annexures

Annexure (i)

Table A: Historical background of crop insurance scheme in India and their key features

Name of the scheme	Operational years	Key features
Individual Indemnity based crop insurance scheme (IIBCIS)	1972 – 1978	Introduced for H-4 cotton variety in Gujarat but was later extended to other crops and states
Pilot crop insurance scheme (PCIS)	1979-1984	Crop insurance was linked to crop loans covered 13 states
Comprehensive crop insurance scheme (CCIS)	1985-1999	Compulsory for loanee farmers Premium rates: cereals and millets (2%), pulses and oilseeds (1%) Subsidy on premium: 50% for small and marginal farmers Premium and claims were shared between the centre and state government in the ratio of 2:1
National agricultural insurance scheme (NAIS)	1999- 2016	Implemented for 35 <i>kharif</i> and 30 <i>rabi</i> crops Gram panchayat was selected as a unit under area approach Non-reflection of pre-sowing and post-harvest losses in the yield index Requirement of huge infrastructure and manpower for crop cutting experiment
Weather based crop insurance	2003 – 2016	Launched as pilot programme in Andhra Pradesh Linked to crop loan by BASIX group

scheme(WBCIS)		Quantitative relationship: weather parameters and crop yields Covered :18 states
Modified NAIS (MNAIS) Rabi	2010 – 2016	Started as pilot in 50 district for food grains, oilseeds, annual horticultural crops Compulsory for loanee farmers Subsidy in premium:25-75% Insurance unit was reduced to village panchayat/equivalent unit
National crop insurance programme (NCIP)	2013- 2016	MNAIS, WBCIS, CPIS were merged to form NCIP Subsidy on premium rate (75%) Higher indemnity level:80% and 90% instead of 70, 80& 90%
Restructured weather based crop insurance schemes (RWBCIS)	Currently operational	Implemented in 12 states during <i>Kharif</i> and in 9 states during <i>Rabi</i> 2016-17 R-WBCIS uses weather parameters as proxy for crop yields for compensating the cultivators for deemed losses It uses reference weather stations (BWS) Claims are processed in accordance to the insurance term sheets, pay-out structure and the scheme provisions and are paid within 45 days from the end of the risk period Administrated by ministry of agriculture and farmers welfare
Pradhan Mantri Fasal Bima Yojana (PMFBY)	Currently operational	One nation-one scheme Premium for <i>Kharif</i> (2%), <i>Rabi</i> (1.5%) and annual commercial horticulture crops (5%)

APPENDIX (ii)

Table 14.15 (a): State-wise Progress under Pradhan Mantri Fasal Bima Yojana (PMFBY) - Cumulative upto Rabi 2017-18

(₹ in lakh)

S.No.	State / UTs	No. of Farmers covered	Area Insured (In Ha)	Sum Insured	Farmers' Premium	Gol Premium (Share)	State Govt. Premium (Share)	Gross Premium	Claims Reported	Claims Paid	No. of Farmers Benefitted
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Andhra Pradesh	2070909	1762127.38	1204050.23	28176.42	44286.31	44286.31	116749.04	64409.75	53653.39	222395.00
2	Andaman & Nicobar Islands	688	501.58	94.23	0.94	1.59	2.06	4.59	14.56	14.56	295.00
3	Arunachal Pradesh										
4	Assam	65808	47539.60	29477.68	623.42	400.49	400.49	1424.41	91.78	67.78	1541.00
5	Bihar	4708756	4330124.13	2069805.77	36130.29	92101.51	92101.51	220333.31	75017.62	71777.62	330328.00
6	Chhattisgarh	3006604	4633625.97	1406163.71	27144.06	20195.04	20195.04	67534.14	152876.32	152752.20	779051.00
7	Dadra & Nagar Haveli										
8	Daman & Diu										
9	Goa	143	88.05	63.83	1.27	0.09	0.09	1.45	0.23	0.23	4.00
10	Gujarat	3367246	5178233.98	2215890.08	55253.89	216379.06	229991.49	501624.44	213771.03	213596.10	1028270.00
11	Haryana	2689605	4016730.35	2403107.89	40500.81	16208.24	24974.29	81683.35	115983.86	114910.29	518205.00
12	Himachal Pradesh	491405	163072.71	61865.22	924.54	959.17	959.17	2842.88	1716.59	1716.59	86436.00
13	Jammu & Kashmir	152143	152566.49	48530.90	899.94	1599.32	1599.32	4098.58	991.00	991.00	26231.00
14	Jharkhand	2077676	675615.10	351873.76	6840.96	21036.58	21036.57	48914.11	7277.69	7051.86	184537.00
15	Karnataka	4212496	4346912.98	1752076.74	42346.00	132194.25	132194.25	306734.50	245884.86	239730.75	2167970.55
16	Kerala	34110	300250.5	28337.10	572.25	321.98	321.98	1216.21	732.16	729.66	5310.00
17	Lakshadweep										

(Contd.)

Table 14.15(a) (Contd.)

S.No.	State / UTs	No. of Farmers covered	Area Insured (In Ha.)	Sum Insured	Farmers' Premium	Gof Premium (Share)	State Govt. Premium (Share)	Gross Premium	Claims Reported	Claims Paid	No. of Farmers Benefitted
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
18	Madhya Pradesh	13358486	24197236.55	7790373.53	140410.06	346193.76	346193.76	832797.58	725387.61	714805.23	2782967.00
19	Maharashtra	21791250	12792524.47	3953493.14	98514.94	315557.10	315557.10	729629.15	460486.96	460438.72	7959818.00
20	Manipur	17475	27785.78	8671.14	148.54	202.42	202.42	553.37	245.54	245.54	10819.00
21	Meghalaya	3034	3436.29	2724.11	102.22	21.99	21.99	146.19	4.34	17559.34	247427.00
22	Mizoram	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	Nagaland										
24	Odisha	3399380	2509811.80	1366072.39	26917.87	49412.41	49412.41	125742.69	215213.13	215213.13	901420.00
25	Puducherry	8537	7978.62	3398.78	22.49	120.16	145.32	287.97	757.21	757.21	4299.00
26	Punjab										
27	Rajasthan	17570079	19517121.76	3839753.35	82529.64	206471.80	206478.78	495480.22	346828.58	339350.47	5351438.00
28	Sikkim	1238	237.39	119.57	1.89	0.20	0.20	2.28	10.77	10.77	225.00
29	Tamil Nadu	2920090	2573468.72	1456997.90	25072.48	121372.58	121372.58	267817.63	468877.06	406705.16	2825239.00
30	Telengana	1735345	1535191.88	861849.76	19512.86	21237.61	21237.62	61988.08	31893.00	30702.64	388258.00
31	Tripura	24434	7983.28	5099.92	88.51	12.89	12.89	114.29	166.04	166.04	6266.00
32	Uttar Pradesh	11593456	10269710.99	4513898.19	83165.63	77080.59	77080.59	237326.82	87959.38	87742.42	1638354.00
33	Uttarakhand	381318	202449.57	133669.44	1619.76	424.00	424.00	2467.75	773.48	772.16	38605.00
34	West Bengal	8190803	3866966.10	2421966.07	49354.72	46112.29	47645.99	143113.01	66970.89	63866.18	1089573.00
Total		103872514	102849067	37929424	766876	1729903	1753848	4250628	3284341	3195327	28595282

Source: Department of Agriculture, Cooperation & Farmers Welfare

FY 2016-17 - PMFBY & RWBCIS Combined - State Wise Business Statistics as on 09.07.2021

State/UT Name	Farmers Application s Insured (Lakh)	Area Insured (Lakh ha)	Sum Insured	Farmers Share in Premium	Gross Premium	Reported Claims	Paid Claims	Farmer Application s Benefitted (Lakh)
A & N Islands	0.003	0.003	0.47	0.002	0.02	0.15	0.15	0.003
Andhra Pradesh	17.757	15.599	8,648.25	199.846	803.59	943.77	943.77	8.987
Assam	0.603	0.418	244.79	4.971	8.64	5.37	5.37	0.236
Bihar	27.142	24.841	11,805.40	204.588	1,416.04	347.85	347.85	2.161
Chhattisgarh	15.491	21.621	6,458.22	121.671	289.25	159.97	159.97	1.377
Goa	0.008	0.005	5.80	0.068	0.07	0.03	0.03	0.001
Gujarat	19.799	30.206	12,016.65	243.193	2,274.62	1,267.22	1,267.22	6.800
Haryana	13.362	20.852	11,785.75	196.528	363.42	296.94	296.94	2.245
Himachal Pradesh	3.799	1.294	929.15	31.097	71.63	45.18	45.18	1.004
Jammu & Kashmir	-	-	-	-	-	-	-	-
Jharkhand	8.793	3.718	2,002.21	39.630	271.41	31.13	31.09	0.598
Karnataka	29.465	24.781	9,369.41	235.188	1,344.56	2,093.83	2,093.83	19.013
Kerala	0.774	0.531	332.48	7.210	33.14	43.74	43.73	0.551
Madhya Pradesh	74.608	120.928	36,897.20	723.948	3,777.97	2,043.88	2,043.88	13.820
Maharashtra	118.838	71.322	24,019.94	682.594	4,596.45	2,317.90	2,317.90	29.294
Manipur	0.084	0.091	36.94	0.739	3.59	1.96	1.96	0.084
Meghalaya	0.001	0.000	0.47	0.013	0.04	0.03	0.03	0.000
Odisha	18.202	13.187	7,262.35	142.625	539.08	432.74	432.74	1.688
Puducherry	0.085	0.074	33.99	0.225	2.88	7.55	7.55	0.043
Rajasthan	93.547	104.830	17,907.62	377.355	2,563.60	1,917.44	1,917.44	29.014
Sikkim	0.006	0.001	0.46	0.007	0.01	0.11	0.11	0.002
Tamil Nadu	14.625	12.098	6,058.54	106.730	1,101.40	3,648.15	3,648.15	12.922
Telangana	9.741	8.240	5,185.03	96.514	274.87	179.60	179.60	2.250
Tripura	0.118	0.028	17.64	0.292	0.39	0.71	0.71	0.037
Uttar Pradesh	72.893	65.115	29,097.16	529.389	1,170.68	574.58	574.58	11.879
Uttarakhand	2.616	1.324	921.39	19.561	41.59	27.47	27.47	0.618
West Bengal	41.333	19.955	12,071.41	113.541	704.16	421.69	421.69	11.903
GRAND TOTAL	583.7	561.1	203,109	4,078	21,653	16,809	16,809	156.5

Information is based on declarations received from Implementing Insurance Companies and is currently being verified by Department of Agriculture, Cooperation and Farmers Welfare, Government of India with concerned State Governments

\$ Some claim settlement is pending due to issues such as payment failure, pending State subsidy, discrepancies in yield data etc.

FY 2017-18 - PMFBY & RWBCIS Combined - State Wise Business Statistics as on 09.07.2021

State/UT Name	Farmers Application s Insured (Lakh)	Area Insured (Lakh ha)	Sum Insured	Farmers Share in Premium	Gross Premium	Reported Claims	Paid Claims	Farmer Application s Benefitted (Lakh)
A & N Islands	0.004	0.002	0.47	0.002	0.03	-	-	-
Andhra Pradesh	18.317	20.666	10,798.25	248.760	1,272.08	743.86	740.18	7.149
Assam	0.553	0.412	252.79	5.146	11.90	1.18	1.18	0.022
Bihar	23.031	21.247	9,943.70	179.328	1,028.82	401.52	401.52	2.184
Chhattisgarh	14.743	21.220	6,895.99	132.897	361.88	1,391.40	1,391.31	6.587
Goa	0.005	0.004	4.46	0.048	0.05	0.01	0.01	0.000
Gujarat	17.628	25.479	11,975.43	385.720	3,014.27	1,076.75	1,075.83	3.898
Haryana	13.417	19.074	12,086.41	207.778	452.08	895.98	895.98	3.248
Himachal Pradesh	3.817	1.107	769.94	30.505	77.51	64.71	64.71	1.470
Jammu & Kashmir	1.590	1.493	500.14	8.830	40.53	9.84	9.84	0.189
Jharkhand	11.955	2.902	1,495.20	28.262	211.93	47.21	47.21	1.392
Karnataka	20.860	18.062	8,723.24	234.633	1,830.52	856.84	856.84	6.193
Kerala	0.559	0.479	301.33	6.335	25.89	10.96	10.96	0.381
Madhya Pradesh	70.280	118.171	42,055.77	795.735	4,663.15	5,894.85	5,894.85	24.813
Maharashtra	102.746	57.761	19,460.96	508.943	4,255.14	3,293.81	3,292.50	53.815
Manipur	0.091	0.187	49.77	0.747	1.94	0.67	0.67	0.036
Meghalaya	0.031	0.013	18.40	0.553	0.69	0.02	0.02	0.000
Odisha	18.947	13.536	7,326.06	145.274	820.42	1,820.13	1,818.55	7.533
Puducherry	-	-	-	-	-	-	-	-
Rajasthan	91.093	100.389	23,528.03	501.862	2,704.02	2,234.06	2,234.06	25.299
Sikkim	0.015	0.003	2.94	0.064	0.06	0.04	0.04	0.001
Tamil Nadu	15.091	10.912	6,598.64	119.680	1,185.88	2,058.79	2,057.27	10.109
Telangana	10.966	10.526	7,305.14	188.893	677.87	648.50	648.50	4.402
Tripura	0.117	0.030	21.14	0.593	0.74	1.00	1.00	0.027
Uttar Pradesh	54.210	46.136	20,196.88	375.417	1,322.06	380.87	380.87	5.848
Uttarakhand	2.224	1.176	859.67	18.813	67.84	39.45	39.45	0.703
West Bengal	40.384	16.720	11,110.78	79.043	642.27	261.59	261.11	5.505
GRAND TOTAL	532.7	507.7	202,282	4,204	24,670	22,134	22,124	170.8

Information is based on declarations received from Implementing Insurance Companies and is currently being verified by Department of Agriculture, Cooperation and Farmers Welfare, Government of India with concerned State Governments

\$ Some claim settlement is pending due to issues such as payment failure, pending State subsidy, discrepancies in yield data etc.

FY 2018-19 - PMFBY & RWBCIS Combined - State Wise Business Statistics as on 09.07.2021

State/UT Name	Farmers Application s Insured (Lakh)	Area Insured (Lakh ha)	Sum Insured	Farmers Share in Premium	Gross Premium	Reported Claims	Paid Claims	Farmer Application s Benefitted (Lakh)
A & N Islands	0.007	0.006	2.69	0.013	0.24	0.09	-	-
Andhra Pradesh	24.447	18.891	11,291.80	261.780	1,094.02	1,890.00	1,885.06	16.173
Assam	0.740	0.491	316.44	2.038	13.22	2.79	2.79	0.080
Bihar	-	-	-	-	-	-	-	-
Chhattisgarh	15.703	22.746	7,869.38	160.878	888.95	1,087.30	1,087.30	6.561
Goa	0.003	0.003	3.25	0.033	0.03	0.10	0.10	0.000
Gujarat	21.710	26.112	13,676.83	402.563	3,141.39	2,778.08	2,777.89	13.925
Haryana	14.425	20.549	13,742.45	237.819	855.99	946.78	939.95	4.194
Himachal Pradesh	2.690	0.900	725.44	29.724	79.43	55.00	55.00	1.272
Jammu & Kashmir	1.537	1.106	1,365.61	16.909	76.67	26.24	26.24	0.197
Jharkhand	12.935	6.295	3,496.70	20.122	397.39	684.93	21.11	0.577
Karnataka	19.882	22.380	9,696.71	272.568	1,855.59	2,985.01	2,925.59	13.743
Kerala	0.570	0.432	315.83	6.153	35.92	26.74	26.74	0.401
Madhya Pradesh	74.210	129.302	47,346.74	934.766	5,515.19	3,777.21	3,776.75	22.631
Maharashtra	148.343	90.650	30,288.45	789.498	6,120.67	6,069.31	6,062.98	80.551
Manipur	0.015	0.008	5.22	0.104	0.21	0.00	0.00	0.000
Meghalaya	0.009	0.009	4.42	0.103	0.14	0.22	0.22	0.004
Odisha	20.985	14.854	8,740.84	172.659	1,121.50	1,169.97	1,169.97	6.579
Puducherry	0.101	0.081	46.65	-	2.69	0.45	0.45	0.005
Rajasthan	71.796	77.569	29,339.69	659.562	3,658.02	3,428.86	3,425.54	20.633
Sikkim	0.002	0.001	1.14	0.027	0.03	0.00	0.00	0.000
Tamil Nadu	24.644	13.394	8,250.83	148.724	1,469.43	2,656.32	2,656.31	18.938
Telangana	7.991	9.920	6,185.04	155.998	545.55	587.31	148.90	0.588
Tripura	0.021	0.003	2.06	0.048	0.09	0.02	0.02	0.002
Uttar Pradesh	61.270	51.343	21,887.96	399.869	1,418.86	469.16	469.16	6.255
Uttarakhand	1.928	1.089	866.09	20.993	75.06	72.38	72.38	0.849
West Bengal	51.274	17.678	14,024.29	134.375	730.47	535.52	529.39	7.088
GRAND TOTAL	577.2	525.8	229,493	4,827	29,097	29,250	28,060	221.2

Information is based on declarations received from Implementing Insurance Companies and is currently being verified by Department of Agriculture, Cooperation and Farmers Welfare, Government of India with concerned State Governments

\$ Majority of claim settlement is pending due to pending State subsidy and/or pending yield data. Some claims are also pending due to issues such as payment failure, discrepancies in yield data etc.

FY 2019-20 - PMFBY & RWBCIS Combined - State Wise Business Statistics as on 09.07.2021

State/UT Name	Farmers Application s Insured (Lakh)	Area Insured (Lakh ha)	Sum Insured	Farmers Share in Premium	Gross Premium	Reported Claims	Paid Claims	Farmer Application s Benefitted (Lakh)
A & N Islands	0.001	0.001	0.32	0.002	0.03	0.00	-	-
Andhra Pradesh	27.888	20.059	15,276.00	0.172	1,474.85	933.64	926.65	14.749
Assam	10.027	5.615	4,033.73	74.243	160.95	17.27	-	-
Bihar	-	-	-	-	-	-	-	-
Chhattisgarh	40.177	24.346	9,032.42	180.861	1,245.79	1,299.02	1,286.25	14.830
Goa	0.009	0.001	0.96	0.022	0.04	0.01	0.01	0.001
Gujarat	24.810	29.438	16,143.17	467.959	3,614.98	354.89	111.67	0.927
Haryana	17.111	22.505	15,132.97	268.803	1,221.72	932.24	923.30	5.519
Himachal Pradesh	2.840	0.941	746.68	30.711	83.07	64.60	58.01	1.505
Jammu & Kashmir	-	-	-	-	-	-	-	-
Jharkhand	10.921	6.451	3,739.05	2.792	356.02	25.46	-	-
Karnataka	21.316	21.668	9,826.69	253.480	2,276.33	1,316.75	1,167.76	6.206
Kerala	0.581	0.372	307.80	6.117	72.50	85.90	53.40	0.268
Madhya Pradesh	78.929	111.920	31,812.24	624.681	3,750.52	5,907.20	5,811.74	30.563
Maharashtra	145.642	79.223	30,172.60	862.958	6,348.39	6,732.48	6,723.35	87.575
Manipur	0.033	0.026	17.34	0.347	1.26	1.14	1.14	0.032
Meghalaya	0.006	0.003	2.31	0.086	0.09	0.18	0.18	0.005
Odisha	48.769	18.688	12,197.35	241.876	2,132.85	1,177.91	1,129.60	11.994
Puducherry	0.120	0.092	62.30	-	4.18	7.16	-	-
Rajasthan	85.283	96.959	34,915.71	734.819	5,061.55	4,854.79	4,841.38	25.851
Sikkim	0.000	0.000	0.08	0.002	0.00	-	-	-
Tamil Nadu	38.705	14.072	9,329.88	168.419	1,923.39	1,057.99	1,056.84	13.217
Telangana	10.335	11.347	8,459.15	239.487	880.75	402.28	-	-
Tripura	0.364	0.061	37.17	0.756	1.07	0.81	0.78	0.078
Uttar Pradesh	46.947	35.572	16,743.95	321.955	1,304.82	1,116.66	1,092.66	9.340
Uttarakhand	2.127	1.135	968.53	28.208	113.71	103.18	103.17	0.949
West Bengal	-	-	-	-	-	-	-	-
GRAND TOTAL	612.9	500.5	218,958	4,509	32,029	26,392	25,288	223.6

** 2019-20 claims yet to be fully reported*

Information is based on declarations received from Implementing Insurance Companies and is currently being verified by Department of Agriculture, Cooperation and Farmers Welfare, Government of India with concerned State Governments

\$ Majority of claim settlement is pending due to pending State subsidy and/or pending yield data. Some claims are also pending due to issues such as payment failure, discrepancies in yield data etc.

APPENDIX (iii)

Sher-e-Kashmir University of Agricultural Sciences and Technology Jammu

Title of the Research problem: Evaluation of Pradhan Mantri Fasal Bima Yojana in Jammu District.

Interview schedule

1. Sr. no. _____
2. Date of data collection: _____
3. Village: _____
4. Block: _____
5. Tehsil: _____
6. District: _____

Part-1 Socio-economic profile of the respondent.

1. Name of the respondent: _____
2. Father's name: _____
3. Age (Years): _____
4. Gender: Male/Female
5. Martial status: Married/un-married
6. Caste: _____
7. Contact no. of respondent: _____
8. What is your formal Education in school and college you have completed? _____
9. Family size of respondent: _____

Details about family members:

Male..... Female..... Children.....

10. Number of Family members associated with Farming: _____
11. Experience in Farming (years): _____

12. Number of family members in:

1	Government Job	
2	Private Job	
3	Business	
4	Shop	
5	MGNREGA	
6	Daily Wages	
7	Casual labourer	
8	Any other	

13. Main source of Family income_____

14. Social participation:

Organisation	Member	Office bearer
Village panchayat		
Cooperatives		
Farmers club		
Youth club		
Any other		

15. Primary occupation of head of the Family:_____

16. Primary occupation of the respondent:_____

17. Do you have a Ration card?

Yes/No

If yes, then which of the Following

APL/BPL

18. Possession of livestock?

Sr. No	Animal	Total
1	Cow	
2	Buffaloes	
3	He- bull	
4	She- bull	
5	Goats	
6	Sheeps	
7	Poultry	
8	Horse	
9	Any other	

19. Operational land holding (in Kanals)

		Total	Irrigated	Un-irrigated
1.	owned			
2.	Leased-in			
3.	Leased-out			

20. Distance from the market (Kilometer):

21. Distance from agriculture extension office (Kilometer):

22. Distance from the nearest bank involved in PMFBY (Kilometer):

23. Do you have Kissan credit card (KCC)? Yes/No

If yes, did you availing loan Yes/No

If No, then why did you not availing loan-----

24. Do you have extension contact? Yes/No

KVK	
ADO	
Soil conservator office (SCO)	
SKUAST-J	

If No, then what is the Reason? -----

25. Financial inclusion with bank? Yes/No

If yes, then which of the following account?

1	Jan-Dhan	
2	Any other	

26. Do you have mobile phone? Yes/No

If yes, then which of the following?

Sr. no	Phone	
1	Android	
2	i-phone operating system	
3	Features phone	

27. Do you use your mobile phone for extension contact? Yes/No

28. Do you use your mobile phone for PMFBY app? Yes/No

If no, then what is the reason? -----

Part-2

Awareness of farmers about the PMFBY:

1. Are you aware about PMFBY? Yes/No

If yes, then when did you come to know about PMFBY? (year) _____

2. If aware, then source of information about PMFBY?

Newspaper	
Television	
Radio	
Department of Agriculture	
Department of Horticulture	
KVK	
Kisan call centre	
Bank	
Any other	

3. If aware about PMFBY, what is the rate of premium?

Sr. no	crops	Premium
1	Kharif crops	
2	Rabi crops	
3	Horticultural crops	

4. Have you insured your crops? Yes/No

If yes, then give the details of crops:

Sr. no	crops	year	Area	Premium paid
1				
2				
3				
4				

5. Have you insured your crop during the Current year?

Yes/No

If no, then what are the reason of discontinuance _____

6. Whether your crop got damage?

Yes/No

If yes, then damages due to which of the following?

Flood	
Drought/dry spells	
Pests and diseases	
Un-seasonal rains	
Post-harvest loss	
Any other	

If yes, please specify whether you got sum assured for the crop loss?

Yes/No

If No, what are the reasons _____

Part-3

Perception of farmers about PMFBY

Sr. no	Statement	Agree	Disagree	Do not know
1	In my opinion, it provides the financial support in case of crop loss?			
2	In the PMFBY, there is area approach, it should be individual assessment?			
3	In my opinion, compensation is less compared to actual loss?			
4	In my opinion, premium amount is high?			
5	In my opinion, there is lengthy procedure for availing compensation under PMFBY in the bank?			
6	In my opinion there should involvement of private insurance companies for better coverage?			
7	In my opinion, PMFBY is not benefiting farmers?			

CERTIFICATE-IV

Certified that all the necessary corrections as suggested by the external examiner and the advisory committee have been duly incorporated in the thesis entitled "**Evaluation of the Pradhan Mantri Fasal Bima Yojana in Jammu District**" submitted by **Miss Lalita Bhagat**, Registration No.: **J-18-M-533**.



Dr. Rajinder Peshin
Major Advisor

Place: **JAMMU**

Date: **11/01/2022**



Head
Division of Agricultural Extension Education



Vita

VITA

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OGPA : 7.06/10.00

Title of Master's Thesis : Evaluation of the Pradhan Mantri Fasal
Bima Yojana in Jammu District