AERC, Jabalpur, Research Study No.-124

Performance Evaluation of Pradhan Mantri Fasal Bima Yojana (PMFBY) in Madhya Pradesh

Study sponsored by
Ministry of Agriculture & Farmers Welfare,
Government of India New Delhi

AGRO- ECONOMIC RESEARCH CENTRE
FOR MADHYA PRADESH AND CHHATTISGARH
Jawaharlal Nehru Krishi Vishwa Vidyalaya,
Jabalpur (M.P.)

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Report submitted to the

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PREFACE

The present study entitled 'Performance Evaluation of Pradhan Mantri Fasal Bima Yojana (PMFBY) in Madhya Pradesh" was sponsored by the Directorate of Economics & Statistics Department of Agriculture, Cooperation & Farmers Welfare Ministry of Agriculture, Govt. of India, New Delhi.

The study comprises of 90 loanee, 30 non-loanee and 30 uninsured (control) farmers of Jabalpur, Umaria and Sagar districts of Madhya Pradesh. It is observed from the study that Pradhan Mantri Fasal Bima Yojna was not implemented with its all aspects in the State because still crop area is being notified by the Govt. of Madhya Pradesh in State Gadget , which is not covering all the crops grown by the cultivators in their field. This makes major hindrance in introducing new crops, which may be more profitable over the existing traditional crops. One should feel secure for trying innovation in the field of agriculture looking to the competitive world in the present WTO era.

I extend heartfelt thanks to Project Coordinator of the study, Dr. Ranjan Ghosh, Center for Management in Agriculture (CMA), Indian Institute of Management, Vastrapur, Ahmedabad for and Coordination and providing valuable guidelines and time to time suggestions for conducting the study successfully.

The present study was conducted by Dr. H. O. Sharma and Dr. Deepak Rathi of this Centre. The field investigation, tabulation, analysis, interpretation and drafting of the report were performed by them. I wish to express my deep sense of gratitude to team members namely; Dr. Ravi Singh Chouhan and Dr. H. K. Niranjan, Mr. C. K. Mishra, Mr. S. K. Upadhye, Mr. S. S. Thakur, Mr. R. S. Bareliya and Mr. Harishankar Kurmi for their unitiring efforts in bringing this innovative study to its perfect shape.

On behalf of the Centre, I express deep sense of gratitude to Dr. P.K. Bisen, Hon'ble Vice-Chancellor and Chairmen Advisory Body of AERC, Jabalpur, Shri P.C. Bodh, Adviser, AERC Division, Ministry of Agriculture & Farmers Welfare, Govt. of India, New Delhi. Dr. D. Khare, Director Research Services and Director Instruction, Dr. Smt. Om Gupta, Director of Extension, Dr. N. K. Raghuwanshi, Prof. & Head (Dept. of Agri. Econ. & F. M.), Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur for providing the valuable guidance and all facilities during various stages in successful completion of this study of high importance.

I express sincere thanks to Mr. Nirmod Tomar, Regional Manager, AIC of India ltd., Bhopal, Mr. Ravindra Kushwaha, Regional Manager, ICICI LOMBARD, Bhopal and Mr. Umesh Soni, Regional Manager, HDFC ERGO, Bhopal and Branch Manager of Central Co-Operative Bank of selected districts (Jabalpur, Umaria & Sagar) and their staff for providing not only secondary data but also extending great assistance in collection of field data from the respondents.

I hope that the findings and suggestions made in the study would be useful to policy makers of the State and Govt. of India.

Date: 29.03.2018
Place: Jabalpur

(Hari Om Sharma)
Prof. & Director

ABBREVIATIONS

LI	-	Loanee Insured
NLI	-	Non-loanee Insured
AI	-	Average Insured
TI	-	Total Insured
CT	-	Control
HHs	-	Households
AIC	-	Agriculture Insurance Company of India Limited
RoR	-	Records of Right
LPC	-	Land Possession Certificate
SAO	-	Seasonal Agricultural Operations
DLTC	-	District Level Technical Committee
WTP	-	Willingness-to-Pay
MNAIS	-	Modified National Agricultural Insurance Scheme
CCEs	-	Crop Cutting Experiments
PMFBY	-	Pradhan Mantri Fasal Beema Yojana
GIC	-	General Insurance Company
GOI	-	Government of India
SLCCCI	-	State Level Co-ordination Committee on Crop Insurance
SI	-	Sum Insured
NAIS	-	National Agricultural Insurance Scheme
WBCIS	-	Weather Based Crop Insurance Scheme
MSP	-	Minimum Support Price
GCA	-	Gross Cropped Area
HDFC	-	Housing Development Finance Corporation, ERGO, General Insurance Company Ltd.
ERGO	-	Euthanasia Research and Guidance Organization
ICICI	-	Industrial Credit and Investment Corporation of India Limited, Lombard, General Insurance Company Ltd.

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CHAPTER-I

OVERVIEW OF PMFBY

AIndia is one of the most disaster prone countries in the world owing to its physiological and climatic conditions. Since the last decade, India has suffered crop losses almost every year either due to flood or drought or frost/extreme temperatures. Agriculture is the mainstay of the rural economy in India and is largely carried out by small and marginal farmers who have poor access to credit, high dependence on rainfall and majority of whom practice subsistence farming. Increasing incidence of farmers' suicides due to successive crop failures because of weather fluctuations have alerted the policy makers to take crop insurance seriously in India. (Govindaraj et.al, 2016) There have been many cases of farmers' suicide on account of crop loss and it is truly challenging for any Government to control such unfortunate incidences unless have a formal mechanism to protect the agricultural risk. A crop insurance scheme is effective when it is implemented with a right spirit and covered to all farmers with right amount of claims paid to right person at a right time. (Rajaram and Chetana, 2016).

Crop insurance is one alternative available to manage risk in yield loss by the farmers. It is a potent mechanism to reduce the overall impact of income loss on the farmer (family and farming). Thus, it is a means of protecting farmers against the probable variations in their yield, resulting from uncertainty of practically all natural factors beyond their control such as rainfall (drought or excess rainfall), flood, hails, other weather variables like (temperature, sunlight, wind), the pest infestation, etc. It is a financial tool to minimize the impact of loss in farm income by factoring in a large number of uncertainties occurring, which affect the crop yields of the farmers. As such it is a risk management alternative process, where the production risk element is transferred to another party at a cost, which is called premium. To design and implement an appropriate insurance programme for the agriculture is therefore very complex process and a challenging task. There are two approaches to crop insurance, namely, the individual approach method, where yield loss on individual farms forms the basis for indemnity payment, and the homogeneous area approach method, where a homogeneous crop area is taken as a unit for assessment of yield and the payment of indemnity. In fact in both the cases the reliable and the dependable yield data for past 8- 10 years are needed for the fixing premium on actuarially sound basis. (Nayak Yayati, 2016) (Pradeepika, 2017).

There are various models of agricultural insurance such as area based crop yield insurance, rainfall insurance, farmers income insurance, weather based insurance which are tried across various countries. Some of the insurance products are successful such as Kilimo Salama, weather index based crop insurance in Kenya, while some programs fail. The main reason for the failure of the most of insurance products is that they are unable to reach the sustainable scale due to lack of trust towards agricultural insurance by the farmers. The challenge involves developing a sustainable and economically feasible agriculture insurance model catering to the specific needs of the different segments of farmers and also meeting the interests of all the stakeholders such as producers, government, lending institutions and the insurance industry. (Govindaraj et.al, 2016).

The government and the policy makers have always faced a few challenges vis-à-vis the task of ensuring food security, higher agricultural growth and adequate jobs in agriculture sector. There has been always a long felt need to bring together at one place all conceptual issues, detailed institutional framework and operational details related to farmers' welfare, risk management of farming community and the crops during drought and floods and other localized risk factors. Therefore the announcement of the New Crop Insurance scheme on 13th January, 2016 Pradhan Mantri Fasal Bima Yojana (PMFBY) to mitigate the rural distress caused by crop failure or damage due to factors like un-seasonal rains, monsoon failure, storms, floods, pests and diseases. (Gursharan et.al, 2016).

Government of India has recently approved Pradhan Mantri Fasal Bima Yojana (PMFBY) which would replace the existing schemes of National Agricultural Insurance Scheme (NAIS) & Modified National Agricultural Insurance Scheme (MNAIS) from Kharif 2016. PMFBY would be available to the farmers at very low rates of premium which would be up to a maximum of 1.5% for Rabi and up to 2% for Kharif for Food crops, Pulses and Oilseeds and up to 5% for Annual Horticulture/ Commercial Crops. This scheme would provide insurance cover for all stages of the crop cycle including post-harvest risks in specified instances. (Subash et.al, 2017) .

PMFBY aims at supporting sustainable Production in the agriculture sector by way of -

a) Providing financial support to farmers suffering crop loss/damage arising out of unforeseen events
b) Stabilizing the income of farmers to ensure their continuance in farming
c) Encouraging farmers to adopt innovative and modern agricultural practices

Box 1.1 : Comparison of PMFBGY (2016) with NAIS (1999) and MNAIS (2010)

S. No.	Features	NAIS (1999)	MNAIS (2010)	PMFBGY (2016)
1	Premium rate	Low (1.5-3.5 percent) and no premium subsidy for horticulture/ commercial	High (up to 15 per cent), premium subsidy for all crops	Almost equal to NAIS (1.5-5 Percent), premium subsidy for all crops
2	Insurance unit	Village Panchayat, block and taluka	Village/village panchayat for major crops	Village/village panchayat panchayat for major crops
3	Indemnity level	60, 80, 90 per cent	80, 90 per cent	70, 80, 90 per cent
4	Sum insured	Loan amount/ value of TY/ 150% value of AY	Sanctioned credit limit/ value of TY / 150% value of AY	Equal to scale of finance
5	One season-one premium	Yes	No	Yes
6	Insurance amount cover	Full	Capped	Full
7	On-account payment	No	Yes	Yes
8	Localized risk coverage	No	Hailstorm, landslide	Hailstorm, landslide, inundation
9	Post-harvest cyclonic rain	No	Coastal areas-for losses coverage	All India-for cyclonic + unseasonal rain
10	Prevented sowing coverage	No	No	Yes
11	Use of technology (for quicker settlement of claims)	No	Intended	Mandatory
12	Claim liability	-	Government will underwrite losses beyond 500 per cent of seasonal gross premium	Government will under write losses beyond 350 percent of seasonal gross premium
13	Minimum sample size for CCE	Not specified	Same in PMFBY and MNAIS	Same in PMFBY and MNAIS
14	Monitoring of Scheme	-	Provision for social audit and sending list of beneficiaries to gram panchayat, 1-5 per cent of beneficiary to be cross checked	Social audit provision removed completely, no beneficiary list will be sent to gram panchayat, 1-5 per cent of beneficiary to be cross checked
15	Insurance companies	Only government	Government and private both	Government and private both

d) Ensuring flow of credit to the agriculture sector which will contribute to food security, crop diversification and enhancing growth and competitiveness of agriculture sector besides protecting farmers from production risks.

All farmers including sharecroppers and tenant farmers growing the notified crops in the notified areas are eligible for coverage. However, farmers should have insurable interest for the notified/ insured crops. The non-loanee farmers are required to submit necessary documentary evidence of land records prevailing in the State (Records of Right (RoR), Land possession Certificate (LPC) etc.) and/or applicable contract/ agreement details/other documents notified/ permitted by concerned State Government (in case of sharecroppers/ tenant farmers). All farmers availing Seasonal Agricultural Operations (SAO) loans from Financial Institutions (i.e. loanee farmers) for the notified crop(s) would be covered compulsorily. The Scheme would be optional for the non-loanee farmers.

The crop and risks leading to crop loss are covered under the scheme in the following stages:

a) **Prevented Sowing/ Planting Risk :** Insured area is prevented from sowing/ planting due to deficit rainfall or adverse seasonal conditions.

b) **Standing Crop (Sowing to Harvesting) :** Comprehensive risk insurance is provided to cover yield losses due to non- preventable risks, viz. Drought, Dry spells, Flood, Inundation, Pests and Diseases, Landslides, Natural Fire and Lightening, Storm, Hailstorm, Cyclone, Typhoon, Tempest, Hurricane and Tornado.

c) **Post-Harvest Losses :** coverage is available only up to a maximum period of two weeks from harvesting for those crops which are allowed to dry in cut and spread condition in the field after harvesting against specific perils of cyclone and cyclonic rains and unseasonal rains.

d) **Localized Calamities :** Loss/ damage resulting from occurrence of identified localized risks of hailstorm, landslide, and Inundation affecting isolated farms in the notified area.

e) **General Exclusions:** Losses arising out of war and nuclear risks, malicious damage and other preventable risks shall be excluded.

The insurance cover will not be applicable in the damage of crops due to war & kindred perils, nuclear risks, riots, malicious damage, theft or act of enmity, grazed and/or destroyed by domestic and/or wild animals and other preventable risks shall be excluded.

In case of Loanee farmers under Compulsory Component, the Sum Insured would be equal to Scale of Finance for that crop as fixed by District Level Technical Committee (DLTC) which may extend up to the value of the Threshold Yield of the insured crop at the option of insured farmer. The value of the threshold yield is lower than the Scale of Finance; higher amount shall be the Sum Insured. Multiplying the National Threshold Yield with the Minimum Support Price (MSP) of the current year arrives at the value of sum insured. Wherever, Current year's MSP is not available, so previous years MSP shall be adopted. The crops for which, MSP is not declared, farm gate price established by the marketing department, board shall be adopted.

The Scheme shall be implemented on an 'Area Approach Basis' (i.e., Defined Areas) for each notified crop for widespread calamities. The assumption that all the insured farmers, in a Unit of Insurance, should be defined as "Notified Area" for a crop, face similar risk exposures, incur to a large extent, identical cost of production per hectare, earn comparable farm income per hectare, and experience similar extent of crop loss due to the operation of an insured peril, in the notified area. The Unit of Insurance can be demographically mapped with region having homogenous Risk Profile for the notified crop. (Anonymous, 2016).

Thus, PMFBY is an important and ambitious scheme aimed at ensuring stable incomes for farmers in the event of agrarian uncertainties. It is one of the largest experiments of its kind in the world given its potential to benefit millions of small and poor farmers. Yet many bottlenecks may be experienced in its successful implementation, such as: a) farmer awareness of insurance benefits, b) farmer understanding of the insurance process, c) willingness to pay the premiums, d) access to insurance providers, e) timely receipt of insurance claims, and f) willingness of the state governments to share the burden of subsidy on premium. As much as actuarial risks matter for the insurance companies, farm sector presents unique challenges that differ from general insurance products in terms of seasonality, climatic vagaries and high sunk investments. Hence transaction costs of managing a crop insurance scheme could become very high, requiring different kind of governance mechanisms. In this context, the study will a) assess the factors influencing the willingness-to-pay (WTP) for reliable crop insurance, b) analyze the factors that influence insurance uptake, and c) suggest appropriate governance mechanisms needed for ensuring increased uptake and efficient disbursements. The scheme is implemented in al the state of the country. How well the Scheme is being

implemented by the implementing agencies and how well is the crop notification, information flows and disbursements of the scheme in Madhya Pradesh are the matter of intend study hence this study has been under taken in Madhya Pradesh with following specific objectives:

1.1 Objectives of the Study

1. To assess the governance of different stakeholders under PMFBY in the State.
2. To assess socio-economic characteristics of insured and uninsured farmers.
3. To identify insurance behaviour of insured farmers

1.2 Limitation of the Study

The study does not claim its completeness in all the aspects and certainly had some limitations. The primary data relating to the objectives of the study were collected from the sample respondents. The information provided by them is totally based on the memory as they do not keep any record for their farming activities.

1.3 Organization of the Study

The study organized into 6 chapters. Chapter I deals with the overview of the PMFBY followed by the research methodology used for the study (Chapter-II). Chapter III deals with the governance of different stakeholders under PMFBY. Chapter IV deals with the socio- economic characteristics of insured and uninsured farmers. Insurance behaviour of insured farmers has been discussed in Chapter V. Chapter VI dealt with summary and policy implication.

§§§

CHAPTER-II

RESEARCH METHODOLOGY

This chapter deals with sampling techniques used, nature and type of data required, tools of data collection, methods of classification, tabulation and analysis of collected data and concept used in analysis and interpretation of data.

2.1 Sampling Techniques

The study is confined to Madhya Pradesh. A list of all the farmers benefited under PMFBY has been prepared and classified according to number of farmers benefitted under low, moderate and high uptake district by using Mean ± Standard deviation technique for selection of the respondents. Out of 51 districts in the State, 5, 38 and 8 falls under low moderate and high uptake districts. A district in each categories have been selected for the study with care that the selected district should not fall in the same agency working for PMFBY in the State. There were found three insurance agencies i.e. Agriculture Insurance Company of India Limited (AIC), Lombard General Insurance Company Limited. (ICICI) and HDFC ERGO General Insurance Company Limited working in 31, 10 and 10 districts respectively for crop insurance in the State (Fig. 2.1).

Umaria, Jabalpur and Sagar districts have been selected randomly under ICICI Lombard, AIC of India and HDFC ERGO respectively. (Table 2.1)

A District Cooperative Bank of each district has been selected purposively for the study. A branch having maximum number of beneficiaries has also been selected for the study. Thus, Umaria, Sehora and Bhagwanganj branches of District Cooperative Bank of Umaria, Jabalpur and Sagar districts respectively have been selected for the study (Fig. 2.1).

A list of all the beneficiary of these branches has been prepared separately and 30 beneficiary in each branch have been selected for the study Further, 10 non-loanee and 10 un-insured were selected in the vicinity of selected branches to draw meaningful conclusion (Table 2.2).

Thus, 90, 30 and 30 loanee, non Loanee and uninsured respondents were selected for the study in Madhya Pradesh.

2.2 Nature and Sources of Data

The study is based on both primary and secondary data. The secondary data on number of loanee and non-loanee farmers insured, total area insured, total sum insured, gross premium received, total claim and total number of farmers benefited from PMFBY in different districts of Madhya Pradesh have been collected from the office of the ICICI Lombard General Insurance Company Limited., Agriculture Insurance Company of India Limited and HDFC ERGO General

Table 2.1: Selected districts according to uptake under PMFBY in M.P.

S. No.	District	Name of Insurance Company	Total No. of Farmers Insured	Total Area Insured Hac.	Total Sum Insured (Lakhs)	Total Premium (Lakhs)	Total Claim (Lakhs)	Total No. of Farmers Benefited
Low uptake District (Mean - SD)								
1	BURHANPUR	A I C OF INDIA L	52	120	48.1	1.0	0.0	0
2	SIDHI	A I C OF INDIA L	2475	4337	528.7	10.6	1.1	70
3	UMARIA	ICICI LOMBARD GIC LTD	6939	12095	2610	444	19	284
4	SINGROLI	A I C OF INDIA L	7578	5941	668.2	13.4	18.7	811
5	BHIND	A I C OF INDIA L	8462	16538	1759.7	35.2	0.4	30
Moderate uptake District between (Mean - SD) & (Mean + SD)								
6	SATNA	A I C OF INDIA L	9331	16788	2678.7	53.6	1029.1	4556
7	ANUPPUR	ICICI LOMBARD GIC LTD	10353	20190	4240	721	0.6	75
8	KATNI	A I C OF INDIA L	11472	25229	8113.0	162.3	0.0	0
9	SHAHDOL	ICICI LOMBARD GIC LTD	12904	23142	4961	636	5	57
10	DINDORI	A I C OF INDIA L	13414	18275	3878.4	77.6	1.1	25
11	REWA	A I C OF INDIA L	14619	28743	6229.8	124.6	1172.3	5398
12	JABALPUR	A I C OF INDIA L	14974	31506	9853.5	197.1	49.0	307
13	ALIRAJPUR	A I C OF INDIA L	15943	7315	1375.2	27.5	0.3	120
14	SHEOPUR	A I C OF INDIA L	16796	44259	12833.8	256.7	436.4	4231
15	MORENA	A I C OF INDIA L	18996	33562	9327.8	186.6	22.2	570
16	MANDLA	A I C OF INDIA L	20433	31947	6947.1	138.9	2.1	122
17	PANNA	HDFC ERGO GIC LTD	20739	47635	7727	1094	773	9757
18	KHANDWA	A I C OF INDIA L	24183	47159	18863.4	377.3	88.0	808
19	BHOPAL	A I C OF INDIA L	29052	78461	14532.8	290.7	4972.3	29032
20	GWALIOR	HDFC ERGO GIC LTD	31270	81097	17457	1676	153	6171
21	NARSINGHPUR	A I C OF INDIA L	31789	51425	11570.1	231.4	23.8	1016
22	TIKAMGARH	HDFC ERGO GIC LTD	38293	47231	12326	1151	1859	10611
23	HARDA	A I C OF INDIA L	39289	123690	23501.1	470.0	27.4	341
24	DATIA	HDFC ERGO GIC LTD	39408	60532	17080	931	6239	28739
25	ASHOKNAGAR	HDFC ERGO GIC LTD	40476	122357	36690	2279	14389	38174
26	BARWANI	A I C OF INDIA L	41646	33200	5750.7	115.0	157.6	4782
27	KHARGONE	A I C OF INDIA L	47334	19824	3951.5	79.0	0.0	0
28	DAMOH	HDFC ERGO GIC LTD	48091	127776	22474	3655	2981	23075
29	SHIVPURI	HDFC ERGO GIC LTD	50280	115629	29060	3182	12344	31034
30	AGAR MALWA	ICICI LOMBARD GIC LTD	53148	107405	31147	6229	2190	17039
31	CHHATAPUR	HDFC ERGO GIC LTD	54876	69629	18653	1808	1213	13874
32	BALAGHAT	A I C OF INDIA L	56561	76895	17366.1	347.3	0.0	0
33	SEONI	A I C OF INDIA L	59531	103636	19232.4	384.6	24.3	762
34	JHABUA	A I C OF INDIA L	63382	20718	5270.4	130.7	18.7	1374
34	JHABUA	A I C OF INDIA L	63382	20718	5270.4	130.7	18.7	1374
35	GUNA	HDFC ERGO GIC LTD	65618	173498	51839	7972	21231	57139
36	NEEMUCH	ICICI LOMBARD GIC LTD	70559	104401	56056	6713	5416	22351
37	BETUL	A I C OF INDIA L	71091	144421	35716.0	714.3	176.1	2467
38	INDORE	A I C OF INDIA L	71730	161764	56617.2	1132.4	308.9	1171
39	HOSHANGABAD	A I C OF INDIA L	78990	202754	46359.8	927.2	125.4	3815
40	DHAR	A I C OF INDIA L	90592	199675	56611.5	1132.2	227.5	3808
41	SHAJAPUR	ICICI LOMBARD GIC LTD	93256	221919	64356	11198	548	5811
42	RAISEN	A I C OF INDIA L	96644	262705	67428.1	1348.6	9290.9	53790
43	CHHINDWARA	A I C OF INDIA L	101207	132924	15490.6	309.8	213.1	9411
High uptake District (Mean + SD)								
44	MANDSAUR	ICICI LOMBARD GIC LTD	124680	204109	110102	13641	1100	9146
45	RATLAM	ICICI LOMBARD GIC LTD	131495	149935	39895	5976	490	7929
46	SAGAR	HDFC ERGO GIC LTD	134097	315510	78207	15731	21112	112853
47	VIDISHA	A I C OF INDIA L	152815	464023	81594.7	1631.9	40208.9	152815
48	RAJGARH	A I C OF INDIA L	155331	393426	90454.4	1809.1	4682.9	30594
49	SEHORE	A I C OF INDIA L	156291	396325	113134.6	2262.7	5550.2	43850
50	DEWAS	ICICI LOMBARD GIC LTD	158758	345049	93174	18609	106	2464
51	UJJAIN	ICICI LOMBARD GIC LTD	164328	371618	81756	15533	3095	27353

Insurance Company Limited situated at Bhopal The primary data have been collected from sample respondent on different aspect viz. socio-economic conditions, land utilization pattern, cropping pattern and various indicators of crop insurance for the year 2016-17.

2.3 Tools of Data Collection

A structured interview schedule provided by the coordinator has been used for collection of data which was translated into local language (Hindi) and tested under the local conditions. The primary data were classified in the light of stated objectives of the study. The MS excel was used for classification, tabulation and analysis of data.

2.4 Concepts Used

a. Crop Cutting Experiments (CCE)

This is the most important precondition for implementation of the scheme as CCE provides yield assessment data to the insurance companies, based on which claims ratio is calculated. As per the operational guidelines, state agencies are responsible for this.

Through primary and secondary information nodal state agency for implementing the PMFBY for found out and judged how equipped it is. There is also provision of external agencies to get involved in CCEs.

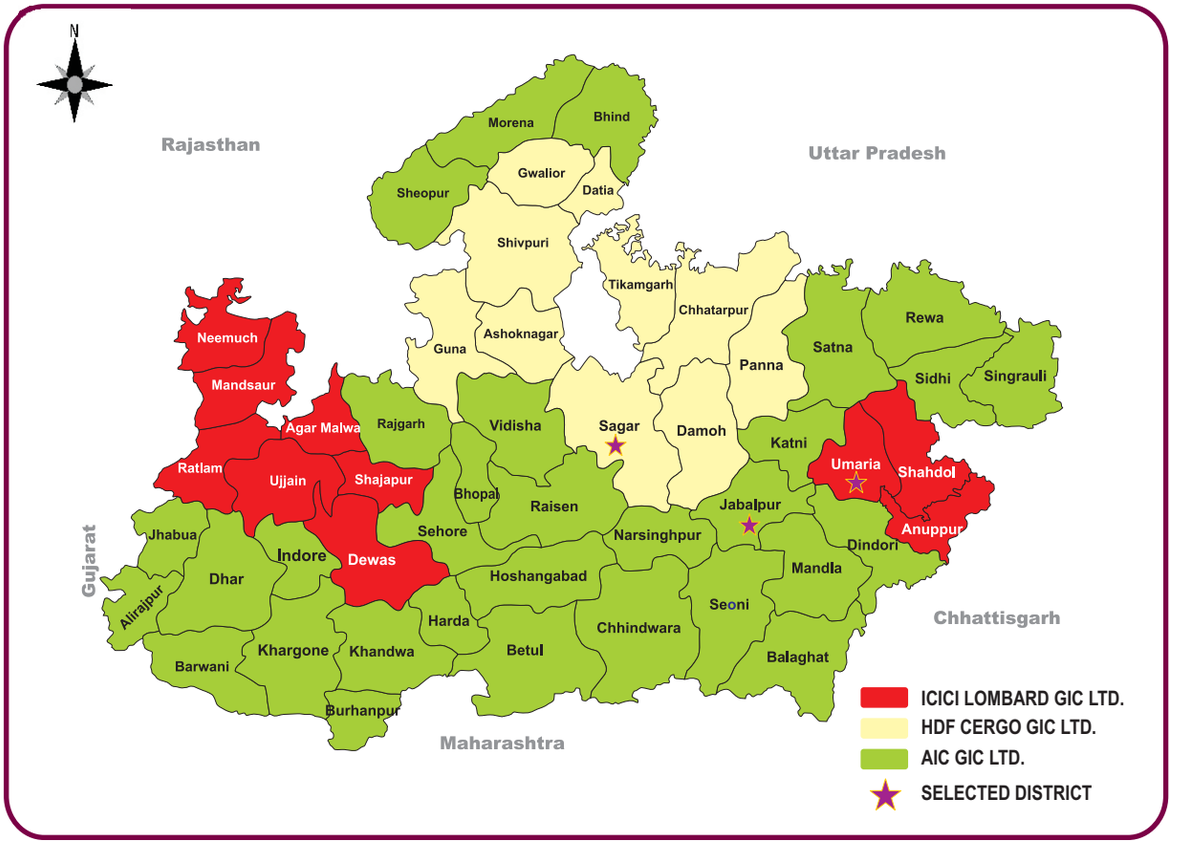

Fig 2.1 Selected districts under PMFBY in Madhya Pradesh

Table 2.2: Number of selected farmers in different districts of Madhya Pradesh under PMFBY

Districts	Name of Agencies	District Cooperative Bank	Branch of District Cooperative Bank	No. of selected farmers			
				Loanee	Non Loanee	Control	Total
Umaria	ICICI Lombard	Umaria	Umaria	30	10	10	50
Jabalpur	AIC	Jabalpur	Sehora	30	10	10	50
Sagar	HDFC ERGO	Sagar	Bhagwanganj	30	10	10	50
Total				90	30	30	150

b. Claims Disbursement

For all different kinds of risk cover – prevented sowing/planting risks, loss to standing crop, post-harvest losses and mid-season adversity – there is a stipulated time - frame within which IAs are supposed to disburse the claims. Through primary interviews timeliness of disbursement of claim and operational hurdles were found out.

c. Agency Costs

As per Section V.2 of Operational Guidelines – PMFBY, the State Level Coordination Committee on Crop Insurance (SLCCCI), is the nodal agency for implementation of PMFBY. SLCCCI was looking after NAIS (National Agricultural Insurance Scheme) and NCIP (National Crop Insurance Program) which were operational before PMFBY and not found to be very successful. While agency continuity is rich in past experiences, it may carry over the past inefficiencies as well.

a. Empanelment of Insurance Companies

Insurance Companies are selected based on a bidding process after determination of indemnity limits, threshold yields and premium rates based on historical yield data in the respective IUs for chosen crops. Through stakeholder interviews and available data, the efficiency of this process and the role of various nodal agencies (for instance, in providing CCE, weather data) was assessed.

b. Subsidy Sharing

The difference between actuarial premium rate and the rate of insurance charges payable by farmers is the rate of normal premium subsidy. This is to be shared equally by the Central and State government.

f. Information and Awareness

Through primary interviews with uptake farmers, effective medium access to the scheme viz. nodal agency, web portal and/or insurance agents was also judged.

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CHAPTER III

GOVERNANCE OF DIFFERENT STAKE HOLDERS UNDER PMFBY

This chapter deals with the number of farmers insured & their area covered under different seasons and net premium payable by them. with notified crops and their scale of finance

3.1 Farmers Insured under PMFBY

The number of farmers insured during Kharif and Rabi seasons under PMFBY across LI, NLI and TI insured is presented in table 3.1

Table 3.1: Number of farmers insured in different seasons under PMFBY in Madhya Pradesh (2016-17)

Season	Loanee Insured	Non- Loanee Insured	Total Insured
Kharif	3357814 (59.19) /89.81	381075 (81.35) /10.19/	3738889 (60.88) /100.00/
Rabi	2315525 (40.81) /96.36/	87385 (18.65) /3.64/	2402910 (39.12) /100.00/
Total	5673339 **(100.00)** /92.37/	468460 **(100.00)** /7.63/	6141799 **(100.00)** /100.00/

Figures in parenthesis shows the percentage to Madhya Pradesh & figures in slashes show percentage to total

The data presented in table 3.1 shows that the total number of farmers insured during both the seasons were found to be 6141799, out of which 92.37 and 7.33 per cent were found to be LI and NLI, respectively. Out of total insured farmers, 60.88 percent insured their crops during Kharif and 39.12 per cent during Rabi season. Out of total farmers insured who insured their crops during Kharif (3738889) and Rabi season (2402910), 89.81 & 96.36 per cent were found to be LI. Out of LI and NLI farmers, 59.19 & 81.35 per cent insured their crops during Kharif and 40.81 & 18.65 per cent during Rabi season, respectively. It is clear from the above that only 7.63 per cent NLI farmers used to insure their crops in both the seasons which was found to be more in Kharif (10.19%) as compared to Rabi (3.64%). It seems that due to erratic monsoon, raising crops during Kharif is more risky as compared to Rabi season.

3.2 Area Covered in Different Season under PMFBY

The area covered under insurance during Kharif and Rabi seasons under PMFBY along with uninsured and total area is presented in table 3.2.

Table 3.2: Area covered in different season under PMFBY (in lakh ha.)

Season	Area Insured	Non- Loanee Area	Total Area
Kharif	60.92 (58.25) /50.66/	59.32 (45.73) /49.34/	120.24 (51.32) /100.00/
Rabi	43.66 (41.75) /38.27/	70.40 (54.27) /61.73/	114.06 (48.68) /100.00/
Total	104.58 **(100.00)** /44.63/	129.73 **(100.00)** /55.37/	234.31 **(100.00)** /100.00/

Figures in parenthesis shows the percentage to Madhya Pradesh & figures in slashes show percentage to total

The data presented in table 3.2 indicates that out of total area (234.31 lakh ha.), only 44.63% was found to be covered under insurance. Out of total area insured, the area insured during Kharif (51.32%) was found to be more as compared to Rabi season (48.68%). The area under insured and un-insured remain almost same during Kharif season while in Rabi season only 38.27 per cent was found to be covered under insurance.

It can be concluded from the above that area insured during Kharif was also found to be more as compared to Rabi season.

3.3 Net Premium Payable and Subsidy

The net and gross premium payable along with State and Central share as subsidy in premium during Kharif and Rabi season in the State for the year 2016-17 is presented in table 3.3.

The gross and net premium payable was found to be 334642.32 & 56881.42 lakhs out of which 72.94 & 27.06 per cent gross and

Table 3.3: Percentage of NET premium to payable and subsidy to Gross Premium Madhya Pradesh (2016-17) (in lakh)

Season	Net Premium Payable	State Subsity	Central Subsidy	Gross Premium
Kharif	35986.75 (63.27) /14.74/	104048.36 (74.92) /42.63/	104048.36 (74.92) /42.63/	244083.48 (72.94) /100.00/
Rabi	20894.67 (36.73) /23.07/	34832.08 (25.08) /38.46/	34832.08 (25.08) /38.46/	90558.84 (27.06) /100.00/
Total	56881.42 (100.00) /17.00/	138880.45 (100.00) /41.50/	138880.45 (100.00) /41.50/	334642.32 (100.00) /100.00/

Fig. in parenthesis shows the percentage to Madhya Pradesh & figures in slashes show percentage to total

63.27 & 36.73 per cent net premium is payable during Kharif and Rabi seasons respectively. The State and Central share equal subsidy, which was found to be 138880.45 lakhs in both the cases out of which 74.92 and 25.08 per cent is payable during Kharif and Rabi seasons respectively. Out of gross premium payable the share of net premium payable, State and Central subsidy was found to be 17.00, 41.50 and 41.50 respectively. This was found to be 14.74, 42.63 and 42.63 during Kharif and 23.07, 38.46 and 38.46 during Rabi seasons.

Thus, it can be concluded from the above that the gross premium which include State subsidy (74.92%), central subsidy (74.92%) and net premium (63.27%) payable by the farmer was found to be more in Kharif (>60 %) as compared to Rabi season.

3.4 Gross Premium over SUM Insured

The gross premium payable and sum insured under different agencies such as AIC, HDFC and ICICI during Kharif and

Table 3.4: Percentage of gross premium over sum insured by different agencies in Madhya Pradesh (2016-17) (in lakh)

Season	Agencies	Gross Premium	Sum Insured
Kharif	AIC	124541.98 /13.89/	896369.44 /100.00/
	HDFC	39840.47 /13.67/	291513.30 /100.00/
	ICICI	79701.04 /16.32/	488295.94 /100.00/
	Total Kharif	244083.48 (72.94) /14.56/	1676178.69 (54.61) /100.00/
Rabi	AIC	38612.97 /5.62/	687112.81 /100.00/
	HDFC	13279.40 /4.74/	297402.53 /100.00/
	ICICI	38666.47 /9.47/	408466.49 /100.00/
	Total Rabi	90558.84 (27.06) /6.50/	1392981.84 (45.39) /100.00/
Total MP	AIC	163154.95 /10.30/	1583482.26 /100.00/
	HDFC	53119.87 /9.02/	588915.83 /100.00/
	ICICI	118367.50 /13.20/	896762.44 /100.00/
	Total	334642.32 /10.90/ (100.00)	(100.00) 3069160.52 /100.00/

Fig. in parenthesis shows the percentage to Madhya Pradesh & figures in slashes show percentage to Sum insured.

Rabi seasons for the year 2016-17 is presented in table 3.4. The total sum insured was found to be Rs. 3069160.52 against the gross premium Rs. 334642.32, which is nearly 10.90 per cent of the sum insured.

As for as percentage of gross premium payable under different agencies to total sum insured is concerned it was found to be maximum in case of ICICI Lombard (13.20% against Rs. 896762.44) followed by AIC (10.30% against Rs. 1583482.26) and HDFC (9.02% against Rs. 588915.83). The similar trend was observed during Kharif (16.32% against Rs. 488295.94, 13.89 % against Rs. 896369.44 and 13.67 % against Rs. 291513.30) and Rabi (9.47% against Rs. 408466.49, 5.62 % against Rs. 687112.81 and 4.74 % against Rs. 297402.53) season.

Thus, total sum insurance was found to be more in Kharif (54.61%) as compared to Rabi (45.39%) and contribution of gross premium in sun insured was found to be only 11 per cent in Madhya Pradesh.

3.5 Claim Amount over Gross Premium

The percentage of claim amount distributed against the gross premium collected by different agencies during Kharif and Rabi season is presented in table 3.5.

Table 3.5: Percentage of total claim amount over gross premium by different agencies in Madhya Pradesh (2016-17) (in lakh)

Season	Agencies	CLM Amount	Gross Premium
Kharif	AIC	71922.38 /57.75/	124541.98 /100.00/
	HDFC	82293.62 /206.56/	39840.47 /100.00/
	ICICI	12969.70 /16.27/	79701.04 /100.00/
	Total Kharif	167185.70 (98.46) /68.50/	244083.48 (72.94) /100.00/
Rabi	AIC	2617.12 /6.78/	38612.97 /100.00/
	HDFC	0.00 /100.00/	13279.40
	ICICI	0.00	38666.47 /100.00/
	Total Rabi	2617.12 (1.54) (27.06)	90558.84 /2.89/ /100.00/
Total MP	AIC	74539.50 /45.69/	163154.95 /100.00/
	HDFC	82293.62 /154.92/	53119.87 /100.00/
	ICICI	12969.70 /10.96/	118367.50 /100.00/
	Total MP	169802.81 (100.00) /50.74/	334642.32 (100.00) /100.00/

Fig. in parenthesis shows the percentage to Madhya Pradesh & figures in slashes show percentage to Gross Premium

The total claim amount (Rs.169802.81) distributed against the gross premium (Rs. 334642.32) collected by different agencies was found to be 50.74 per cent. The percentage of claim distributed against the gross premium collected by respective agencies was found to be maximum in case of HDFC (154.92% of Rs. 5311987), AIC (45.69% of Rs.163154.95) and ICICI Lombard (10.96% of Rs. 118367.50).

The similar trend was observed during Kharif and maximum claim amount was found to be distributed by HDFC (206.56 % of Rs. 39840.47) followed by AIC (57.75 % of Rs. 124541.98) and ICICI Lombard (16.27 % of Rs.79701.04). In Rabi season the claim was distributed by AIC only, which was 6.7% of 38612.97.

Thus, it is concluded that total amount claimed over gross premium was found to be 50.74 per cent, which was found more in Kharif (98.46%) as compared to Rabi (2.89%). Among the different agencies working for crop insurance in Madhya Pradesh, HDFC (154.92%) distributed more claim against gross premium compared to other agencies in Madhya Pradesh.

3.6 Benefited Farmers to Total Insured Farmers

The number of farmers benefited out of total insured farmers during different seasons of 2016-17 is presented in table 3.6

The data presented in table depicts that 13.99 per cent farmers were found to be benefited out of total insured farmers (6141799) during different seasons of 2016-17. The total insured farmers during Kharif and Rabi season were found to be 60.88 & 39.12 per cent, respectively, while it was found to be 96.46 & 3.54 per cent out of total benefited farmers (859177).The number of farmers benefited during Kharif and Rabi season were found to be only 22.17 & 1.27 per cent out of total insured farmers during the same season. The total farmers insured during Kharif were one and half times higher than the Rabi season, while twenty seven times higher in case of benefited farmers. It is clear from the above

Table 3.6: Benefited farmers to total insured farmers during different season in Madhya Pradesh (2016-17)

Season	Number of Farmers Benefited	Total Insured of farmers
Kharif	828733 (96.46) /22.17/	3738889 (60.88) /100.00/
Rabi	30444 (3.54) /1.27/	2402910 (39.12) /100.00/
Total	859177 (100.00) /13.99/	6141799 (100.00) /100.00/

Fig. in parenthesis shows the percentage to Madhya Pradesh & figures in slashes show percentage to total

discussion that cultivating crops during Kharif is found to be more risky than the Rabi season.

3.7 Number of Insured Farmers

The numbers of loanee, Non-loanee and total farmers insured out of cultivators covered by different agencies under PMFBY in Madhya Pradesh during 2016-17 is presented in table 3.7

Table 3.7: Number of farmers insured by different agencies under PMFBY in Madhya Pradesh (2016-17)

Agencies	Loanee Insured	Non Lonee Insured	Total Insured Farmers	No. of Cultivators
AIC	3227077 (56.88) /51.84/	301835 (64.43) /4.85/	3528912 (57.46) /56.69/	6225379 (61.55) /100.00/
HDFC	884344 (15.59) /40.95/	136009 (29.03) /6.30/	1020353 (16.61) /47.25/	2159581 (21.35) /100.00/
ICICI	1561918 (27.53) /90.31/	30616 (6.54) /1.77/	1592534 (25.93) /92.08/	1729550 (17.10) /100.00/
MP	5673339 (100.00) /56.09/	468460 (100.00) /4.63/	6141799 (100.00) /60.72/	10114510 (100.00) /100.00/

Fig. in parenthesis shows the percentage to Madhya Pradesh & figures in slashes show percentage to total Cultivators

The data presented in table shows that the maximum number of LI (56.88%) and NLI (64.43%) farmers were covered by AIC followed by 15.59 & 29.03 per cent by HDFC and 27.53 & 6.54 per cent by ICICI. The total insured farmers were also found to be maximum in case of AIC (57.46) followed by ICICI (25.93%) and HDFC (16.61%). Out of total cultivators (10114510), 6225379 (61.55%), 2159581 (21.35%) and 1729550 (17.10%) per cent are being covered by AIC, HDFC and ICICI, respectively and 60.72 per cent were insured as LI (56.09%) and NLI (4.63%). The total farmers insured (LI & NLI) out of total cultivators covered under ICICI, AIC and HDFC were 92.08 (90.31 & 1.77), 56.69 (51.84 & 4.85) and 47.25 (40.95 & 6.30) per cent, respectively. (Fig 3.1) Thus, it can be concluded that amongst the different agencies, AIC covered maximum number of cultivators (Fig. 3.1) in maximum number of districts (31), in spite of that ICICI (92.08%) covered maximum percentage of total insured farmers followed by AIC (56.69%) and HDFC (47.25%).

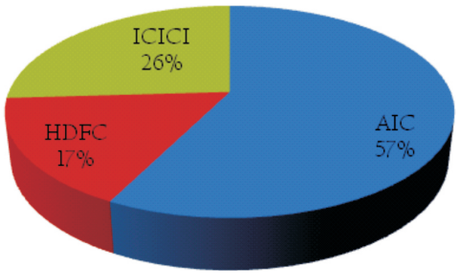

Fig 3.1: Total insured farmers through different agencies in Madhya Pradesh

Table 3.8: Notified crop scale of finance, premium and level of notification in selected districts of Madhya Pradesh (2016-17)

S.No.	Crop	Scale of Finance (Rs./ha.)	Premium (Rs./ha.)	Level of Notification
Kharif				
Sagar				
1.	Soybean	30000	600	Patawari Halka
2.	Moong Urd	22000	440	District
Umaria				
1.	Paddy Un-Irrigated	21000	420	Patawari Halka
2.	Paddy Irrigated	26250	525	Patawari Halka
3.	Urd	21000	420	Patawari Halka
4.	Soybean	26250	525	Patawari Halka
Jabalpur				
1.	Paddy	36000	720	Patawari Halka
2.	Soybean	30000	600	Patawari Halka
3	Urd	21000	420	Patawari Halka
4.	Tur	25000	375	Patawari Halka
Rabi				
Sagar				
1.	Wheat Irrigated	30000	450	Patawari Halka
2.	Wheat Un-irrigated	21000	315	Patawari Halka
3.	Chick Pea	25000	375	Patawari Halka
	Lentil	23000	345	District
Umaria				
1.	Wheat	28000	420	Patawari Halka
2.	Lentil	20000	300	Patawari Halka
3.	Linseed	15000	225	Patawari Halka
4.	Chickpea	18500	278	Patawari Halka
Jabalpur				
1.	Wheat	36000	540	Patawari Halka
2.	Chickpea	25000	375	Patawari Halka

3.8 Notified crops their scale of finance, premium and level of notification

The list of notified crops, scale of finance (Rs/ha.), premium (Rs./ha.) and level of notification for the year 2016-17 in the selected districts during Kharif & Rabi seasons are presented in table 3.8

The notified crops during Kharif season under PMFBY for the year 2016-17 were soybean and Moong/Urd with scale of finance 30000 & 22000 Rs. /ha respectively in Sagar district. Paddy irrigated & un-irrigated, Urd and Soybean with scale of finance 26250 & 21000, 21000 and 26250 Rs. /ha respectively in Umaria district and paddy with scale of finance 36000 Rs. /ha in Jabalpur district.

The notified crops during Rabi season under PMFBY for the year 2016-17 were Wheat Irrigated & Un-Irrigated, chickpea and Lentil with scale of finance 30000 & 21000, 25000, and 23000 Rs. /ha respectively in Sagar district. Wheat, Lentil, Linseed and Chickpea with scale of finance 28000, 20000, 15000 and 18500 Rs. /ha respectively in Umaria district and wheat with scale of finance 36000 Rs./ha in Jabalpur district. The premium for the Kharif and Rabi crops was 2 and 1.5 per cent of Scale of finance of the notified crops during the year of 2016-17.

The level of notification was Patawari halaka for all the notified crops grown during Kharif and Rabi seasons in the selected area except Moong/urd during Kharif and lentil during Rabi in Sagar district, where level of notification was district.

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CHAPTER-IV

FARM LEVEL CHARACTERISTICS OF SAMPLE HOUSEHOLDS

Socio-economic profile, income, value of assets, access to credit, operational holding, irrigated area, cropping pattern, production and its value across different categories of household (HHs) such as loanee insured (LI), non-loanee insured (NLI), average insured (AI) and uninsured (control) are covered in this chapter. This helps in understanding the existing situation of family, income received from different sources, possession of assets and their value, access to credit along with purpose, duration and out-standings.

4.1 Socio-economic Profile

Socio-economic profile indicates information on age group, years of schooling, caste, gender, occupation, family size and income of the households across LI, NLI, TI and Control and presented in the table 4.1.

It is clear from the table that on an average the majority of the insured HHs were found to be male (97.50%) belong to OBC Category (57.50%) having Agriculture as primary (100%) and salary as a secondary (13.34%) occupation with age group between 16 to 59 (82.50%), educated up to higher secondary level (39.17%). The average size of the family was found to be 7 persons out of which 46.43 per cent were engaged in agriculture and getting an annual income of Rs.332476 and total annual income through all sources was found to be Rs. 366964.

The NLI (90%) farmers were found to have more percentage of adult members as compared to LI (80%), the percentage of HHs educated up to secondary level were also found to be more in case of NLI (43.33%) and LI (37.78%). In case if LI HHs 3.33 per cent were found to be female while all NLI were male. The size of family in case of NLI was found to be 7 as compare to 6 in LI. The member's engaged in farming were found to be more in case of LI (50%) as compared to NLI (42.86%). The annual income per HH was found to be more in case of LI Rs. 377721 as compared to NLI Rs. 334691. Out of this the share of income received from agriculture and other occupations were found to be 92.29 & 7.71 and 84.89 & 15.11 per cent in case of LI and NLI respectively.

In case of control the percentage of HH educated till primary level were found to be maximum (43.33%), 66.67 per cent belong to OBC category, out of total HHs 90 per cent were male and 10 per cent were female engaged in farming (86.67%) and salaried employee (20.00%) as a primary and secondary occupation, respectively. The average family size was found to be 6, out of which 48.22 per cent were engaged in farming.

The annual income per HH received through agriculture was found to be Rs. 184289 (77.78%) and Rs. 52647 (22.22%) through other occupation amounting to Rs. 236936 as a total income. The income obtained from

agriculture and other sources constitutes 92, 85 & 78 and 8, 15 & 22 per cent of total annual income per HH i.e Rs. 377721, 334691 & 236936 of LI, NLI and control HHs.

It is clear from the above discussion that all the socio-ecomomic characters of sample respondent irrespective to LI, NLI, ALI and control were found to be almost similar.

Table 4.1: Socio-economic profile HH (% to Sample)

Particulars		Loanee Insured (n=90)	Non-Loanee Insured (n=30)	Average Insured (n=120)	Control (n=30)
Age	Adults 16-59	80.00	90.00	82.50	86.67
	Senior > 60 years	20.00	10.00	17.50	13.33
Years of schooling	Illiterate	4.44	3.33	4.16	6.67
	Primary	34.45	30.00	33.34	43.33
	High school	37.78	43.33	39.17	36.67
	Graduate and above	23.33	23.34	23.33	13.33
Caste	SC/ST	4.44	10.00	5.83	10.00
	OBC	57.78	56.67	57.50	66.67
	General	37.78	33.33	36.67	23.34
Gender	Male	96.67	100.00	97.50	90.00
	Female	3.33	0.00	2.50	10.00
Occupations of Sample HH	Primary (Agriculture)	100.00	100.00	100.00	86.67
	Secondary (Salary)	8.89	26.67	13.34	20.00
Family Size		6	7	7	6
Family members engaged in farming		50.00	42.86	46.43	48.22
Per H.H. income (in Rs./annum)	Agriculture	348593 (92.29)	284123 (84.89)	332476 (90.60)	184289 (77.78)
	Other	29128 (7.71)	50568 (15.11)	34488 (9.40)	52647 (22.22)
	Total	377721 (100)	334691 (100)	366964 (100)	236936 (100)

Figure in parenthesis show percentage to total

However, LI (Rs.348593) were getting more annual income per HH as compared to NLI (Rs.284123) and control (Rs.184289) from agriculture only indicates that the agriculture was found to be profitable in the area under study.

4.2 Income Received

The HH monthly income received from non-agricultural sources such as salary from employment, farm labor, pension, rents house/land, business / trade and others are presented across LI, NLI and control HHs in table 4.2.

Table 4.2: Monthly income from non-agricultural Sources (Rs./month)

Particulars	Loanee Insured (n=90)	Non-Loanee Insured (n=30)	Average Insured	Control (n=30)
Salary from employment	633 (39.07)	1393 (42.02)	823 (40.26)	2441 (81.89)
Farm labor	32 (1.98)	14 (0.42)	28 (1.35)	40 (1.34)
Pension	333 (20.56)	1333 (40.21)	583 (28.52)	333 (11.17)
Rents house/ land	11 (0.68)	0 (0)	8 (0.40)	0 (0)
Business / trade	594 (36.67)	575 (17.35)	589 (28.82)	0 (0)
Others	17 (1.05)	0 (0)	13 (0.64)	167 (5.6)
Total	1620 (100)	3315 (100)	2044 (100.00)	2981 (100)

Figure in parenthesis show percentage to total

The table depict that the total income obtained from non-agricultural sources under LI, NLI and control was found to be Rs. 1620, 3315 and 2981/month. The salary contributes about 40 per cent of total income, which is same in LI and NLI, while it was found to be 82 per cent in case of control. Income obtained through business was found to be double in relative term in case of LI (36.67%) than the NLI (17.35%) but as for as pension is concerned, it was found to be double in NLI (40.21%) than LI (20.56%) and control (11.17%). Farm labour and other sources contribute 1.98 & 1.05, 0.42 & 0.00 and 1.34 & 5.6 per cent income in case of LI, NLI and control, respectively.

Thus, it is clear from the above results that the non loanee insured farmer received more monthly income as compared to loanee insured and uninsured farmers. The non-insured farmers received 82 per cent income from salary. This might be a major cause for not insuring the crops.

4.3 Assets Value

The assets value of owned land, machinery, building and livestock across LI, NLI and control are presented in table 4.3.

The total value of assets vas found to be Rs. 4805760, 3964833, 3109733 in case of LI, NLI and control, respectively. The value of owned land, machinery, building and livestock in terms of percentage of total value of assets were found to be more or less similar in case of LI and NLI, which is around 86, 6.5, 6.7 and 0.3 per cent respectively in both the cases. In case of control it was found to be 73.44, 17.24, 8.92 and 0.4 per cent respectively.

Above discussion clearly indicate that

Table 4.3: Asset Value per HH (in Rs.)

Particulars	Loanee Insured (n=90)	Non-Loanee Insured (n=30)	Average Insured (n=30)	Control
Owned Land	4150883 (86.37)	3443833 (86.86)	3974121 (86.48)	2283833 (73.44)
Machinery	315967 (6.57)	244100 (6.16)	298000 (6.48)	536000 (17.24)
Building	323722 (6.74)	266500 (6.72)	309417 (6.73)	277500 (8.92)
Livestock	15188 (0.32)	10400 (0.26)	13991 (0.30)	12400 (0.4)
Total	4805760 (100)	3964833 (100)	4595528 (100.00)	3109733 (100)

Figure in parenthesis show percentage to total

out of total value of assets in different categories, the value of owned land in terms of percentage, control is smaller than LI and NLI while value of machinery, building and livestock were found to be greater than LI and NLI.

4.4 Access to Credit

The access to credit to sample HHs is jugged through the information regarding credit amount, purpose of loan, its duration, amount paid with interest and outstanding loan across LI and NLI categories and same is presented in table 4.4.

The credit dispersed per HH was found to be more in case of LI (Rs.40071) as compared to NLI (Rs. 34000) all the HHs used to take loan for the purpose of the agriculture and for the period of 6 months in case of LI while in case of NLI the loan is taken for the period of 6 months to one year by 54.14 & 42.86 per cent HH respectively. There is no outstanding in case of LI but it was Rs.

Table 4.4: Access to credit to sample HH

Particulars		Loanee Insured (n=90) (Coop.) (Private)	Non-Loanee Insured (n=30)	Average Insured
Amount (Rs.)		40071	34000	38553
Purpose of loan - Agri. (%) 100		100	100	
Duration (%)	6 months	100.00	54.14	89
	1 year	0.00	42.86	11
Amount paid with interest (Rs.)		40071	28000	37053
Outstanding loan from-2016 present (Rs.)		0	6000	1500

6000/HH under NLI. Thus, it is clear from the above findings that there is outstanding of loan with NLI and credit from institutional sources might not be accessible to them and farmer is not able to have credit linked insurance. Inspite of that due to advantages of crop insurance, NLI covering their crops under the insurance cover.

4.5 Operational Holdings

The detail information on irrigated and un-irrigated area of land owned, cultivated land, leased-in and leased-out land along with gross cropped area and net operated area per HHs across LI, NLI and control is presented in table 4.5.

Table 4.5: Characteristics of operational holdings per HH (area in acres)

Particulars	Loanee Insured (n=90)	Non-Loanee Insured (n=30)	Average Insured	Control (n=30)
Owned Land				
Irrigated	8	6	7.5	4.6
Un-irrigated	0.9	1.1	1	0.8
Total	8.9 8.5	(89.0) (85.0)	7.1 5.4	(74.0) (98.2)
Cultivated Land				
Irrigated	8	6	7.5	4.6
Un-irrigated	0.9	1.1	1	0.8
Total	8.9 8.5	(89.0) (85.0)	7.1 5.4	(74.0) (98.2)
Leased-in Land				
Irrigated	1	1	1	0.1
Un-irrigated	0.1	0.3	0.2	0
Total	1.1 1.2	(11.0) (12.0)	1.3 0.1	(13.5) (1.8)
Leased-out Land				
Irrigated	0	0	0	0
Un-irrigated	0	1.2	0.3	0
Total	0 0.3	(0) (3.0)	1.2 0	(12.5) (0)
Gross Cropped Area (GCA)				
Irrigated	9	7	8.5	4.7
Un-irrigated	1	2.6	1.5	0.8
Total	10 (100)	9.6 (100)	10.0 (100)	5.5 (100)
Net Operated Land				
Irrigated	9	7.0	8.5	4.6
Un-irrigated	1	0.2	0.8	0.8
Total	10.0 (100.0)	7.2 (75.0)	9.3 (93.0)	5.4 (98.2)

It is depicted from the data presented in table 4.5 that the gross cropped area of LI, NLI and control was found to be 10, 9.6 and 5.5 acres per HH out of which the owned and leased-in land were found to be 89 and 11 per cent respectively in case of LI, leased-out was not in practice. In case of NLI it was found to be 74, 13.5 and 12.5 respectively, while in control it was found to be 98.2 and 1.8 per cent respectively, leased-out land was not in practices. The net operated land of LI, NLI and control was found to be 10, 7.2 and 5.4 acres per HH. The more than 90 per cent to total net operated land across all the categories of HHs was found to be irrigated.

Thus, it is clear that insured farmers (9.3 acre) have more net operated area than uninsured HHs (5.4 acre) and loanee insured (10 acre) have more net operated area than non loanee (7.2 acre) HHs. Only non loanee HHs used to lease out (12.5%) their land across all the categories of HHs.

4.6 Source-wise Irrigated Area

The area irrigated through dug-well, bore-well, cannel and others and its distribution across LI, NLI and control in terms of numbers of HH is presented in table 4.6.

Table 4.6: Source-wise distribution of irrigated area (Number of HH)

Particulars	Loanee Insured (n=85)	Non-Loanee Insured (n=28)	Average Insured (n=113)	Control (n=26)
Dug well	23 (27.06)	7 (25.00)	19.0 (27.14)	8 (30.77)
Borewell	45 (52.49)	16 (57.14)	38.0 (54.29)	11 (42.31)
Canal	9 (10.59)	3 (10.71)	6.0 (8.57)	1 (3.85)
Others	8 (9.41)	2 (7.14)	7.0 (10.00)	6 (23.08)
Total	85 (100)	28 (100)	70.0 (100)	26 (100)

Figures in brackets are percentages to total HH

It is clear from the data presented in the table that 85 LI, 28 NLI and 26 control used to provide irrigation through different sources, on an average the major sources were found to be bore well (54.29%) followed by dug well (27.14%), others (10.0%) and canal (8.570%). The distribution of source wise irrigation across LI, NLI and control is more or less same but in case of control the irrigation provided through other sources was found to be more in relative term as compared to other categories. Thus, borewell (>40%) followed by dugwell (> 25%) were found to be major sources of irrigation across all the categories of Hhs, although uninsured HHs used to provide irrigation through other sources (23.08%) also.

4.7 Cropping Pattern

The cropping pattern of the HH in the selected area along with gross cropped area, net sown area and cropping intensity across LI, NLI and control is presented in table 4.7.

The gross cropped area in case of LI, NLI and control was found to be 18.76, 15.70 and 10.39 acres, the area covered under Kharif and Rabi seasons in the above mentioned categories was found to be almost 50 per cent very meager area is being covered during Zaid season which is 3.57, 2.29 and 1.76, respectively.

The maximum area covered under different crops in case of LI & NLI categories were found to be paddy (55.27 & 62.93%) followed by soybean (41.29 & 29.73%), urd (2.11 & 5.20%), til (0.67 & 1.07%), tur (0.55 & 0.0%) and maize (0.11 & 1.07%), while in case of control, it was paddy (58.68%) followed by soybean (33.21%), urd (7.55%) and tur (0.57%) in Kharif season. The maximum area covered under wheat (79.52 & 81.6 %) followed by gram (15.97 & 11.71 %), lentil (3.96 & 0.9 %), pea (0.44 & 5.15 %) and vegetables (0.11 & 0.64 %) in case of LI & NLI categories, while wheat (74.16%) followed by gram (15.76%), lentil (9.45%) and vegetables (0.63%) in cases of control during Rabi season. The net sown area of LI, NLI and control was found to be 9.99, 8.35 and 5.47 acres per HH with cropping intensity of 188, 188 and 190 per cent, respectively.

Thus, paddy followed by soybean and wheat followed by gram, lentil were found to be major Kharif and Rabi crops grown by the majority of HHs whether related to loanee, non loanee or uninsured categories. Urd was also grown by the HHs in Zaid season having assured irrigation during summer.

4.8 Production

The production (main & by-product) of major crops grown during Kharif, Rabi and Zaid seasons across LI, NLI, AI and control is presented in table 4.8.

The data presented in table 4.8 depicts that the production obtained through major crops grown during Kharif, Rabi and Zaid seasons were found to be paddy (78.81 & 66.83q/hh) soybean (12.38 & 5.43q/hh), wheat (84.16 & 78.70q/hh), gram (6.75 & 3.58q/hh) and urd (3.16 & 1.73q/hh) in case of LI and NLI respectively, while in case of AI and control, it was paddy (72.85 & 43.75q/hh) soybean (10.64 & 5.88q/hh), wheat (82.80 & 43.13q/hh), gram (5.96 & 3.75q/hh) and urd (2.80 & 1.10q/hh) respectively.

Thus, among all the crops grown by the HHs, wheat followed by paddy and soybean contributed maximum per farm production in the area under study.

Table 4.7: Cropping pattern per farm (in acres)

Particulars	Loanee Insured (n=90)	Non-Loanee Insured (n=30)	Control (n=30)
Kharif			
Paddy	4.98 (55.27)	4.72 (62.93)	3.11 (58.68)
Soybean	3.72 (41.29)	2.23 (29.73)	1.76 (33.21)
Urd	0.19 (2.11)	0.39 (5.20)	0.4 (7.55)
Til	0.06 (0.67)	0.08 (1.07)	0 (0)
Arhar/Tur	0.05 (0.55)	0 (0)	0.03 (0.57)
Maize	0.01 (0.11)	0.08 (1.07)	0 (0)
Total	9.01 (100.00)/48.03/	7.5 (100.00)/47.77/	5.3 (100.00)/51.01/
Rabi			
Wheat	7.22 (79.52)	6.34 (81.6)	3.53 (74.16)
Gram	1.45 (15.97)	0.91 (11.71)	0.75 (15.76)
Lentil	0.36 (3.96)	0.07 (0.9)	0.45 (9.45)
Pea	0.04 (0.44)	0.4 (5.15)	0 (0)
Vegetables	0.01 (0.11)	0.05 (0.64)	0.03 (0.63)
Total	9.08 (100.00)/48.40/	7.77 (100.00)/49.49/	4.76 (100.00)/45.81/
Zaid			
Urd	0.67 (100.00)/3.57/	0.43 (100.00)/2.29/	0.33 (100.00)/1.76/
Net Sown Area	9.99	8.35	5.47
Total GCA	18.76 (100.00)	15.70 (100.00)	10.39 (100.00)
Cropping Intensity	188	188	190

Figures in slash are percentages to total GCA

Table 4.8: Production (quantity in qtls./farm)

Particulars		Loanee Insured (n=90)	Non-Loanee Insured (n=30)	Average Insured	Control (n=30)
Kharif					
Paddy	Main product	78.81	66.83	75.82	43.75
	By-product	13.42	15.10	13.84	7.07
Soybean	Main product	12.38	5.43	10.64	5.88
	By-product	3.81	1.27	3.18	1.63
Urd	Main product	0.62	1.13	0.75	1.13
Til		0.08	0.27	0.13	0.00
Arhar/Tur		0.09	0.00	0.07	0.12
Maize		0.03	0.18	0.07	0.00
Rabi					
Wheat	Main product	84.16	78.70	82.80	43.13
	By-product	19.10	16.20	18.38	2.29
Gram	Main product	6.75	3.58	5.96	3.75
Lentil		1.62	0.30	1.29	1.90
Pea		0.34	4.50	1.38	0.00
Vegetables		0.56	1.00	0.67	0.67
Zaid					
Urd	Main product	3.16	1.73	2.80	1.10

4.9 Quantity Sold

The quantity of major Kharif, Rabi and Zaid crops sold and retained during the year across LI, NLI, AI and control is presented in table 4.9.

The data presented in table 4.9 depicts that the quantity of paddy (90.46 & 83.99%) soybean (57.03 & 71.82%), urd (70.97 & 77.88%), wheat (68.73 &73.7%), gram (85.63 & 69.27%), lentil (89.51 & 73.33%) and urd (96.84 & 97.11%) was found to be sold during the year in case of LI and NLI respectively, while in case of AI and control, paddy (89.03 & 76.41%) soybean (58.91 & 60.88%), urd (73.58 & 82.3%), wheat (69.91 & 54.79%),

Table 4.9 : Quantity Sold (in qtl.)

Particulars		Loanee Insured (n=90)	Non-Loanee Insured (n=30)	Average Insured	Control (n=30)
Kharif					
Paddy	Main product	78.81 (100)	66.83 (100)	75.82 (100)	43.75 (100)
	Sold	71.29 (90.46)	56.13 (83.99)	67.5 (89.03)	33.43 (76.41)
	Retained	7.52 (9.54)	10.7 (16.01)	8.32 (10.97)	10.32 (23.59)
Soybean	Main product	12.38 (100)	5.43 (100)	10.64 (100)	5.88 (100)
	Sold	7.06 (57.03)	3.9 (71.82)	6.27 (58.91)	3.58 (60.88)
	Retained	5.32 (42.97)	1.53 (28.18)	4.37 (41.09)	2.3 (39.12)
Urd	Main product	0.62 (100)	1.13 (100)	0.75 (100)	1.13 (100)
	Sold	0.44 (70.97)	0.88 (77.88)	0.55 (73.58)	0.93 (82.3)
	Retained	0.18 (29.03)	0.25 (22.12)	0.2 (26.42)	0.2 (17.7)
Til	Main product	0.08 (100)	0.27 (100)	0.13 (100)	0 (0)
	Sold	0 (0)	0 (0)	0 (0)	0 (0)
	Retained	0.08 (100)	0.27 (100)	0.13 (100)	0 (0)
Arhar/Tur	Main product	0.09 (100)	0 (0)	0.07 (100)	0.12 (100)
	Sold	0 (0)	0 (0)	0 (0)	0 (0)
	Retained	0.09 (100)	0 (0)	0.07 (100)	0.12 (100)
Maize	Main product	0.03 (100)	0.18 (100)	0.07 (100)	0 (0)
	Sold	0.02 (66.67)	0.17 (94.44)	0.06 (85.19)	0 (0)
	Retained	0.01 (33.33)	0.01 (5.56)	0.01 (14.81)	0 (0)

Rabi					
Wheat	Main product	84.16 (100)	78.7 (100)	82.8 (100)	43.13 (100)
	Sold	57.84 (68.73)	58 (73.7)	57.88 (69.91)	23.63 (54.79)
	Retained	26.32 (31.27)	20.7 (26.3)	24.92 (30.09)	19.5 (45.21)
Gram	Main product	6.75 (100)	3.58 (100)	5.96 (100)	3.75 (100)
	Sold	5.78 (85.63)	2.48 (69.27)	4.96 (83.17)	3.47 (92.53)
	Retained	0.97 (14.37)	1.1 (30.73)	1 (16.83)	0.28 (7.47)
Lentil	Main product	1.62 (100)	0.3 (100)	1.29 (100)	1.9 (100)
	Sold	1.45 (89.51)	0.22 (73.33)	1.14 (88.57)	1.52 (80)
	Retained	0.17 (10.49)	0.08 (26.67)	0.15 (11.43)	0.38 (20)
Pea	Main product	0.34 (100)	4.5 (100)	1.38 (100)	0 (0)
	Sold	0.11 (32.35)	3.33 (74)	0.92 (66.3)	0 (0)
	Retained	0.23 (67.65)	1.17 (26)	0.47 (33.7)	0 (0)
Vegetables	Main product	0.56 (100)	1 (100)	0.67 (100)	0.67 (100) ()
	Sold	0.56 (100)	1 (100)	0.67 (100)	0.67 (100)
	Retained	0 (0)	0 (0)	0 (0)	0 (0)
Zaid					
Urd	Main product	3.16 (100)	1.73 (100)	2.8 (100)	1.1 (100)
	Sold	3.06 (96.84)	1.68 (97.11)	2.72 (96.88)	1.1 (100)
	Retained	0.1 (3.16)	0.05 (2.89)	0.09 (3.12)	0 (0)

Table 4.10: Value of Production (in Rs. per farm)

Particulars	Loanee Insured (n=90)	Non-Loanee Insured (n=30)	Average Insured	Control (n=30)
Kharif				
Paddy	117742 (73.98)	100852 (79.11)	113520 (75.06)	62453 (77.12)
Soybean	38059 (23.91)	19886 (15.6)	33516 (22.16)	17121 (21.14)
Urd	2831 (1.78)	5402 (4.24)	3474 (2.3)	850 (1.05)
Til	175 (0.11)	1120 (0.88)	411 (0.27)	0 (0)
Arhar/Tur	313 (0.2)	0 (0)	235 (0.16)	560 (0.69)
Maize	33 (0.02)	229 (0.18)	82 (0.05)	0 (0)
Total	159153 (100)/46.09/	127489 (100)/44.93/	151237 (100)/45.84/	80984 (100)/45.73/
Rabi				
Wheat	133669 (78.378)	125972 (85.095)	131745 (79.89)	68612 (74.99)
Gram	30734 (18.021)	15265 (10.312)	26867 (16.29)	15875 (17.35)
Lentil	5135 (3.011)	1050 (0.709)	4114 (2.49)	6745 (7.372)
Pea	672 (0.394)	5400 (3.648)	1854 (1.12)	0 (0)
Vegetables	333 (0.195)	350 (0.236)	337 (0.2)	267 (0.292)
Total	170543 (100)/49.38/	148037 (100)/52.17/	164917 (100) /49.98/	91499 (100)/51.66/
Zaid				
Urd	15638 (100)/4.53/	8233 (100)/2.90/	13787 (100)/4.18/	4620 (100)/1.61/
Total	345334 (100)	283759 (100)	329940 (100)	177103 (100)

Figures in slash are percentages to total in year

gram (83.17 & 92.53%), lentil (88.57 & 80%) and urd (96.88 &100%) respectively was found to be sold out. The remaining quantity was found to be retained by the HH for their use in different purposes.

Thus, more than 50 per cent quantity of main product was found to be sold by the HHs. The quantity sold by an average HH was found to be maximum in urd (> 95%), gram (> 80%) followed by lentil (> 80%), , paddy (> 75%), soybean (> 60%) and wheat (> 55%) across different categories.

4.10 Value of Production

The total value of production of different crops grown during various seasons across LI, NLI, AI and control is presented in table 4.10. It is evident from the data presented in table 4.10 that the value of total production per farm was found to be Rs. 159153 & 127489 during Kharif, Rs. 170543 & 148037 during Rabi and Rs. 345334 & 283759 during Zaid in case of LI & NLI respectively

The major share was contributed by paddy (73.98 & 79.11%) and soybean (23.91 & 15.60%) during Kharif, while wheat (78.38 & 85.10%) and gram (18.02 & 10.31%) during Rabi and 100 per cent by urd in Zaid in case of LI and NLI respectively, which clearly shows that above mentioned major crops contributes almost 95 per cent share in total value of production during both the seasons.

The value of total production was found to be Rs. 151237 & 80984 during Kharif, Rs. 164917 & 91499 during Rabi and Rs. 15638 & 8233 during Zaid in case of AI & control, respectively.

The major share was contributed by paddy (75.06 & 77.12%) and soybean (22.16 & 21.14%) during Kharif, while wheat (79.89 & 74.99%) and gram (16.29 & 17.35%) during Rabi and 100 per cent by urd in Zaid in case of AI and control, respectively, which clearly shows that these are the major crops contribute almost 95 per cent share in total value of production during both the seasons.

Thus, an average insured farmer (Rs. 329940/Yr.) received more value of their production as compared to uninsured farmer (Rs. 177103/Yr.). An average loanee farmer (Rs. 345334/Yr.) also received more value of their production as compared to non loanee farmer (Rs. 283759/Yr.) with major contribution from Rabi (>49%) followed by Kharif (>44%) and Zaid (>1%) season crops.

§§§

CHAPTER-V

INSURANCE BEHAVIOR OF SAMPLE HOUSEHOLDS

This chapter deals with the enrolment and awareness, insurance details, experiences with the PMFBY, implementation of the scheme and non-uptake of control HHs across different categories of households (HHs) such as loanee insured (LI) and non-loanee insured (NLI). The awareness and non-uptake of the Scheme by uninsured HHs is also dealt in this chapter

5.1 Enrolment and Awareness

The enrolment and awareness about PMFBY with respect to LI and NLI is judged using different parameters and presented in table 5.1. The data presented in table 5.1 shows that more than 90 per cent HHs were found to heard about the scheme out of which 80 per cent were found to insured under PMFBY as LI and NLI HHs.

Almost 10 per cent HHs were found to avail other insurance schemes i.e. cattle insurance etc. The voluntary enrolment was found to be 64 per cent in LI and 100 per cent in

Table 5-1: Enrolment and awareness of PMFBY

Particulars		Loanee Insured (n=90)	Non-Loanee Insured (n=30)
Heard (yes)		82 (91.0)	27 (90.0)
Availed other insurance scheme (yes)		8 (9.0)	3 (10.0)
Insured (yes)		73 (81.11)	25 (83.33)
Voluntary enroled (yes)		58 (64.44)	30 (100)
Source of awareness	Govt. awareness programs	29 (32.22)	6 (20.00)
	Insurance Company/Agent	9 (10.0)	4 (13.33)
	Panchayat	10 (11.11)	2 (6.67)
	Villagers	11 (12.22)	7 (23.33)
	Others (TV/Newspaper / relatives and friends)	31 (34.44)	11 (36.67)

Figures in brackets are percentages to sampled farmers

NLI. The major Source of awareness was found to be TV/ Newspaper / relatives and friends (34.44 & 36.67%) followed by govt. awareness programs (32.22 & 20.0%), villagers (12.22 & 23.33%) insurance company/ agent, (10.0 & 13.33%), panchayat (11.11 & 6.67%) in case of LI and NLI respectively.

Thus, 90 per cent of the HHs availed crop insurance facility under PMFBY. More than 80 per cent HHs were found to be aware about PMFBY and main source of awareness was found to be TV/ News paper/ relatives and friends (>35%) followed by government awareness programmes (>20%) and insurance companies (>10%) among HHs.

5.2 Insurance Details about HH

The insurance details related to insurance agency, premiums, implementing bank, event of losses and compensation secured across LI and NLI is presented in table 5.2.

The data presented in table 5.2 depicts that AIC, HDFC and ICICI Lombard were found to be implementing agencies in different district in the State. LI and NLI got insurance from all the agencies in equal proportion i.e. 33.33 per cent from each agency.

The premium during Kharif 2016 (Rs.2426 & 2028) and Rabi 2017 (Rs.1819 & 1521) was found to be paid by the HH in case of

Table 5-2 : Insurance details about LI and NLI (per HH)

Particulars		Loanee Insured (n=90)	Non-Loanee Insured (n=30)
Implementing agency	AIC	30 (33.33)	10 (33.33)
	HDFC	30 (33.33)	10 (33.33)
	ICICI Lombard	30 (33.33)	10 (33.33)
Premiums in Rs.	Kharif 2016	2426	2028
	Rabi 2017	1819	1521
Implementing bank - District Cop. Bank		90 (100)	30 (100)
Event of losses	Prevented sowing/planting due to deficit rainfall or adverse weather	3 (3.33)	0 (0.00)
	Yield loss	33 (36.67)	11 (36.67)
Compensation Secured (Rs.) in Kharif 2016		8236	6379

Figures in brackets are percentages to sampled farmers

LI and NLI. The implementing bank was District Cooperative Bank. The event of losses due to adverse weather reported by 3.33 per cent LI while yield losses were reported by 36.67 per cent HH in both cases and the compassion of Rs. 8236 & 6379 was secured by the LI and NLI respectively HH for Kharif 2016.

Thus, AIC, HDFC and ICICI were found to be major implementing agencies of PMFBY in Madhya Pradesh. District Cooperative Bank was found to be main implementing bank in the area under study. The major event of losses were found to be yield loss (36.67%) followed by prevented sowing/ planting due to deficit rainfall or adverse weather (3.33%). The compensation secured in Kharif was found to be more in case of loanee insured (Rs. 8236/-) as compared to non loanee insured (Rs. 6379/-) HHs.

5.3 Experiences with the PMFBY

The experience of LI and NLI with PMFBY was recorded through their opinion and whom they inform in case of loss and the same is presented in table 5.3.

It is evident from the data presented in the table 5.3 that in case of LI, 91.11 per cent HHs were reported that the present scheme is similar to the previous scheme and only 9.89 per cent opined that it is better than the

Table 5-3 : Experiences of the LI and NLI with the PMFBY

Particulars		Loanee Insured (n=90)	Non-Loanee Insured (n=30)
Opinion	Better than earlier schemes	8 (8.99)	0 (0)
	Worse than earlier scheme	0 (0)	4 (13.33)
	Same as others scheme	82 (91.11)	0 (0)
	Never insured earlier	0 (0)	25 (83.33)
	Cannot say	0 (0)	1 (3.33)
Event of loss did you inform any authority (Yes)		30 (33.33)	20 (66.67)
Whom did you inform	Bank officials	14 (46.7)	7 (35.0)
	Local Govt. official	16 (53.3)	13 (65.0)

Figures in brackets are percentages to sampled farmers

schemes running before.

The majority of NLI reported that they never insured their crops earlier (83.33%), 13.33 per cent opined it is worse than earlier scheme and only 3.33 per cent did not say about this. It was found that 33.33 per cent LI used to inform the event of loss to local Govt. officials (53.3%) & bank officials (46.7%) while 66.67 per cent NLI informed about event of loss to local Govt. official (65.0%) & bank officials (35.0%). Thus, the majority of HHs did not know the complete feature of PMFBY in totality and opined that this is same as previous scheme (90%). It was also observed that 33 and 66 per cent of loanee and non loanee insured HHs used to inform event of losses to bank officials (>35%) and local government officials (>53%).

5.4 Implementation of the Scheme

The time taken by the respondents to

5-4: Implementation of PMFBY in the study area

Particulars		Loanee Insured (n=90)	Non-Loanee Insured (n=30)
Event of loss did you inform how many days	Within 48 hours	11 (36.7)	6 (30)
	Within 15 days	19 (63.3)	12 (60)
	Within 1 month	0 (0)	2 (10)
Did anyone visit your farm during CCE (Yes)		5 (5.56)	3 (10)
Are you aware of any yield assessment of CCE taking place in village (Yes)		5 (5.56)	3 (10)
Role of panchayat in process of claims (Yes)		40 (60)	20 (66.67)
Are you satisfied with the implementation PMFBY (Yes)		9 (10)	7 (23.3)
Are you Satisfied with PMFBY's Implementation	Premium should be lower	20 (22.22)	9 (30)
	Less time to finish paperwork	11 (12.22)	3 (10)
	Higher compensation	22 (24.44)	9 (30)
	Timely compensation	32 (35.56)	9 (30)
	Others	5 (5.56)	0 (0)

Figures in brackets are percentages to sampled farmers

inform the officials in case of event of loss, information on visit of CCE, role of panchayat and expectation of the scheme across LI and NLI is presented in table 5.4.

Out of total LI and NLI HHs the event of loss found to be reported within 15 days (63.3 & 60.0%), within 48 hour (36.7 & 30%) and only 10 per cent informed within a month in case of NLI. The 5.56 and 10 LI and NLI reported that their farm were visited during CCE and they were found aware about yield assessment of CCE in their villages. The role of panchayat during the process of claim was recognized by 60 and 66.67 per cent, LI and NLI, respectively. Only 10 per cent LI and 23.3 per cent NLI reported that they were satisfied with the implementation of PMFBY. The most of the LI and NLI respondents reported that scheme requires to be improvised by distribution of timely compensation (35.56 & 30.0%), compensation is required to be increased (24.44 & 30.0%), premium should be lower (22.22 & 30.0%), time to finish paperwork should be reduced (12.22 & 10.0%) and others (5.56 & 0.0%)

Thus, it is revealed from the above findings that only 10 per cent of loanee and 23.3 per cent of non loanee HHs were found to be satisfied with the implementation of PMFBY in the area under study and wants timely & higher compensation, less time to finish paper work and premium should be lower.

Only 90 (non loanee) to 95 (loanee) per cent HHs were not found to be aware about yield assessment of CCE taking place in their village and also were not aware of any visit on their farm. Although they informed the event of crop losses within 48 hours (> 30 %) to 15 days (>60 %).

5.5 Awareness and Non-Uptake of Control HHs

The reasons of non-uptake, awareness and source of information about PMFBY reported by un-insured control HHs is presented in table 5.5

The 83.33 per cent control HHs reported that they heard about PMFBY, in majority of cases they were informed by cooperative society (66.67%), friends (13.33%) and in village (3.33%). The major reason for not enroling under PMFBY were found to be satisfied with present condition (76.67%), critical procedure (6.67%), no need (6.67%), default of last year (3.33%), un-aware about deduction of insurance premium not only at the time of disbursement but repayment also (3.33%) and diversified farm (3.33%).

Thus, it is clear from the above results

Table 5.5: Awareness and non-uptake of PMFBY by control HHs

Particulars		Control (n=90)
Have you heard of PMFBY (yes)		25 (83.33)
If yes, who informed you (Name of the source)	Cooperative Society	25 (66.67)
	Village	1 (3.33)
	Friends	4 (13.33)
Why did not enrol for PMFBY (up to 3 reasons)	Satisfaction with present condition	23 (76.67)
	Critical procedure	2 (6.67)
	No need	2 (6.67)
	Default of last year	1 (3.33)
	Un-aware about deduction of insurance premium not only at the time of disbursement but repayment also	1 (3.33)
	Diversified farm	1 (3.33)

that the majority of control HHs (>80%) were found be heard about the PMFBY from cooperative society (66.67%) followed by friends (13.33%) and village (3.33%) but they did not availed facility of insurance as they were found to be satisfied with their present condition (76.67%) and had no need(6.67%), defaulter of the last year (3.33%) and diversified faming to mitigate risk.

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CHAPTER-VI

CONCLUSIONS AND POLICY IMPLICATIONS

The major finding emerged from the study are as follows:

- ✓ All the loanee farmers were found to have insured their crops under PMFBY. In case of NLI only 7.63 per cent farmers used to insure their crop, which was found to be more in Kharif (10.19%) as compared to Rabi (3.64%). It seems that due to erratic monsoon, raising crops during Kharif is more risky as compared to Rabi season.
- ✓ The total area insured during Kharif (51.32%) was also found to be more as compared to Rabi (48.68%) season.
- ✓ The gross premium which include State subsidy (41.50%), central subsidy (41.50%) and net premium (17.00%) payable by the farmer was found to be more in Kharif (>60 %) as compared to Rabi (<40%) season. The total sum insured was found to be more in Kharif (54.61%) as compared to Rabi (45.39%) and contribution of gross premium in sun insured was found to be only 11 per cent in Madhya Pradesh. The total amount claimed out of gross premium received was found to be 50.74 per cent, which was also found to be more in Kharif (98.46%) as compared to Rabi (2.89%) season. Among the different agencies working for crop insurance in Madhya Pradesh, HDFC (154.92%) distributed more claim against gross premium received compared to other agencies i.e. AIC India and ICICI Lombard in Madhya Pradesh.
- ✓ It was found that out of total cultivators (10114510) in the State, 61.55, 21.35 and 17.10 per cent are being covered under AIC, HDFC and ICICI Lombard insurance agencies, out of which these agencies covered 56.69, 47.25 and 92.08 per cent of total insured farmers (6141799) respectively.
- ✓ Crops notified under insurance, their scale of finance, premium and level of notification was found to be different in different districts in the area under study.
- ✓ All the socio-economic characters of sample respondent irrespective to LI, NLI, ALI and control were found to be almost similar. However, LI (Rs.348593) were getting more annual income per HH as compared to NLI (Rs.284123) and control (Rs.184289) from agriculture only indicates that the agriculture was found to be profitable in the area under study.
- ✓ The non loanee insured farmer received more monthly income as compared to loanee insured and uninsured farmers. The non-insured farmers received 82 per cent income from salary. This might be a major cause for non-insuring the crops.
- ✓ Out of total value of assets in different

categories, the value of owned land in terms of percentage, control is smaller than LI and NLI while value of machinery, building and livestock were found to be greater than LI and NLI.

- ✓ On an average an Insured HH (9.3 acre) has more net operated area than uninsured HH (5.4 acre). In insured category, loanee insured (10 acre) have more net operated area than non loanee (7.2 acre) HH. Only non loanee HHs used to lease-out (12.5%) their land across all the categories of HHs. Hence practice of leased-out land was not found prominent in the area under study.
- ✓ Bore well (>40%) followed by dug well (> 25%) were found to be major sources of irrigation across all the categories of HHs, although uninsured HHs used to provide irrigation through other sources (23.08%) also.
- ✓ Paddy followed by soybean and wheat followed by gram, lentil were found to be major Kharif and Rabi crops grown by the majority of HHs whether related to loanee, non loanee or uninsured categories. Urd was also grown by the HHs in Zaid season having assured irrigation during summer. The average cropping intensity was found to be 188 per cent, which is almost same across all the categories. Among all these crops per0 farm production of paddy and soybean were found to be maximum in the area under study.
- ✓ More than 50 per cent quantity of main product was found to be sold by the HHs across all the categories. The quantity sold by an average HH was found to be maximum in urd (> 95%) followed by gram (> 80%), lentil (> 80%), paddy (> 75%), soybean (> 60%) and wheat (> 55%) across different categories.
- ✓ An average insured farmer (Rs. 329940/Yr.) received more value of their production as compared to uninsured farmer (Rs. 177103/Yr.). An average loanee farmer (Rs. 345334/Yr.) was also found to receive more value of production as compared to non loanee farmer (Rs. 283759/Yr.). The maximum value of production received by an average HH was found to be earned in Rabi (49%) followed by Kharif (>44%) and Zaid (>1%) season crops.
- ✓ The majority of HH (90%) were found to be aware about crop insurance facility under PMFBY and about 80 per cent were found to avail this facility. The main sources of awareness were found to be TV/Newspaper/ relatives and friends (>35%) followed by government awareness programmes (>20%) and insurance companies (>10%).
- ✓ The PMFBY is being implemented by the agencies i.e. AIC, HDFC & ICICI and District Cooperative Bank in the area under study.

- ✓ The major event of losses were found to be from yield (36.67%) followed by prevented sowing/planting due to deficit rainfall or adverse weather (3.33%). The compensation secured by an average HH in Kharif was found to be more in case of loanee insured (Rs. 8236/-) as compared to non loanee insured (Rs. 6379/-) HHs.
- ✓ The majority of HHs did not know the complete feature of PMFBY in totality and opined that this is same as previous scheme (90%). It was also observed that 33 and 66 per cent of loanee and non loanee insured HHs used to inform event of losses to bank officials (>35%) and local government officials (>53%) but only 10 per cent of loanee and 23.3 per cent of non loanee HHs were found to be satisfied with the implementation of PMFBY in the area under study as they want timely & higher compensation, less time in paper work and lower premium rate.
- ✓ The 90 per cent non loanee and 95 per cent loanee were not found to be award about yield assessment of Crop Cutting Experiment taking place in their villages and about their visit also. Although, they informed the event of crop losses within 48 hours (>30 %) to 15 days (>60 %).
- ✓ The majority of sample control HHs (>80%) were found to heard about the PMFBY from cooperative society (66.67%) followed by friends (13.33%) and village (3.33%) but they did not avail facility of insurance as they were found to be satisfied with their present socio-economic condition (76.67%) and they did not need (6.67%), defaulter of the last year (3.33%) and diversified faming to mitigate risk.

Policy Implications

On the basis of above conclusions of the study following policy implications are suggested:-

- Pradhan Mantri Fasal Bima Yojna not implement with its all aspects in the State because still crop area is being notified by the Govt. of Madhya Pradesh in State Gadget, which is not covering all the crops grown by the cultivators in their field. This makes major hindrance in introducing new crops, which may be more profitable over the existing traditional crops. One should be feeling secure for trying innovation in the field of agriculture looking to the competitive world in the present WTO era.
- More awareness should be generated among the farmers' community /stakeholders of the PMFBY for their better understanding about the scheme in totality.
- It is observed during the course of investigation that existing practice of fixing Scale of Finance of crops in a particular district is based on average yield obtain through traditional practices

and price of the main product of a particular crop. Time has come to fix scale of finance on the basis of cost incurred in following recommended package of practice for the crops in a particular area leading to harness with full potential in term of yield and adoption of new/modern technology of crops in the minimum possible time.

- The farmer is not well acquainted with amount of premium debited from his crop loan account. It is being practiced that the premium is debited for the area owned by the farmers but not for the area allocated under the crop insured.
- It is observed from the result that still about 40 per cent of cultivators not insuring their crops in the State. Hence, efforts should be made to cover all these cultivators under insurance through publicity with the help of SHGs, Producer Companies, KVK etc.
- The crop loan sanctioned to the farmers should be supervised by the concerned bank/insurance agencies officials for the better implementation of recommended package of practices of crop cultivation by the cultivators and for ensuring timely recovery of crop loan.
- Assistance through IT services should be given at all stage to the farmers from the date of insurance of particular crop to distribution of compensation. He should be informed on his mobile and email well in advance about all the activities being taken to provide compensation against the losses incurred.
- The yield assessment should be technologically driven through a combination of crop modelling remote sensing and minimal level of ground truthing data for quick distribution of claims.

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REFERENCES

Anonymous (2016) Pradhan Mantri Fasal Bima Yojana, Awareness Campaign by Krishi Vigyan Kendra for Farmers, Division of Agricultural Extension Indian Council of Agricultural Research New Delhi-110012.

Ashish Barua (2016), "Pradhan Mantri Fasal Bima Yojana (PMFBY): Transforming Indian Farmer„s Destiny", Volume XIV, No.1, IRDAI Journal, January, 2016.

Dr. Tapas Kumar Parida (2016), —Pradhan Mantri Fasal Bima Yojana (PMFBY): Issues and Concerns□, Volume XIV, No.1, IRDAI Journal, January, 2016

Dr.Ashish Barua (2016), —Pradhan Mantri Fasal Bima Yojana (PMFBY): Transforming Indian Farmer's Destiny□, Volume XIV, No.1, IRDAI Journal, January, 2016

Dr.S.M.Uvaneswaran T.Mohanapriya (2014), —Farmers' Perception and Awareness about Crop Insurance in Tamilnadu – A Descriptive Analysis□, Intercontinental Journal of Marketing Research Review, ISSN: 2321-0346- Online ISSN: 2347-1670-Print Impact Factor Value: 0.612, Volume 2, Issue 3 (March, 2014)

Govindaraj Anitha, Singh Padamvir, Argal Akhilesh, Tyagi Mangesh (2016) Crop Insurance Models and Relief, Measures in India and Madhya Pradesh, Project Report, Atal Bihari Vajpayee Institute of Good Governance & Policy Analysis.

Gosh Ranjan (2018) "Performance Evaluation of Pradhan Mantri Fasal Bima Yojana". A Governance analysis-National Conference on Agro-Economic Research (Abstract page no. 27), Institute of Economic Growth (IEG), Delhi, January 30-31,2018.Kainth Singh Gursharan, Rajinder Singh Bawa, Navdeep Singh Kainth (2016) Pardhan Mantri Fasal Bima Yojana Challenges and Way Forward

Kattarkandi Byjesh, Uttam Deb and Cynthia Bantilan (2014), —Rainfall Insurance in India:Does it Deal with Risks in Dry land Farming?□, Paper presented at the 8th Conference of the Asian Society of Agricultural Economists (ASAE) held on 15-17 October 2014 at the BRAC Centre for Development Management (BRAC-CDM), Savar, Dhaka, Bangladesh.

Kiyanoush Ghalav and, Karim.MH (Karim Koshteh) and Abolhassan Hashemi (2012), —Agriculture Insurance as a Risk Management Strategy in Climate Change Scenario: A study in Islamic Republic of Iran□, International Journal of Agriculture and Crop Sciences. Available online at www.ijagcs.com_, IJACS/2012/4-13/831-838, ISSN 2227-670X ©2012 IJACS Journal, 670X ©2012 IJACS Journal

Kiyanoush Ghalav and, Karim.MH (Karim Koshteh) and Abolhassan Hashemi (2012),"Agriculture Insurance as a Risk Management Strategy in Climate Change Scenario: A study in Islamic Republic of Iran", International Journal of Agriculture and Crop Sciences. Available online at www.ijagcs.com_, IJACS/2012/4-13/831-838, ISSN 2227-670X ©2012 IJACS Journal

Lopamudra Mohapatra & R K Dhaliwal (2014), "Review of Agricultural Insurance in Punjab State of India" , International Journal of Advanced Research (2014), Volume 2, Issue 5, 459 - 467 ISSN 2320-5407

Lopamudra Mohapatra & R K Dhaliwal (2014), □ Review of Agricultural Insurance in Punjab State of India□, ISSN 2320-5407, International Journal of Advanced Research (2014), Volume 2, Issue 5, 459-467

Mohammed Nasir Uddin, Wolfgang Bokelmann and Jason Scott Entsminger (2014), □ Factors Affecting Farmers' Adaptation Strategies to Environmental Degradation and Climate Change Effects: A Farm Level Study in Bangladesh□, Climate 2014, 2, 223-241; doi:10.3390/cli 2040223, ISSN 2225-1154, www.mdpi.com/journal/climate

Mohammed Nasir Uddin, Wolfgang Bokelmann and Jason Scott Entsminger (2014), "Factors Affecting Farmers„ Adaptation Strategies to Environmental Degradation and Climate Change Effects: A Farm Level Study in Bangladesh", Climate 2014, 2, 223-241; doi:10.3390/ cli 2040223, ISSN 2225-1154, www.mdpi.com/journal/climate

Nayak Yayati (2016) Uncertainty, Risk Management in Agriculture and Crop Insurance in India: Concepts, Schemes and Ideas, Remarketing, II (XII) pp 75-81 2016

Parliament Library and Reference, Research, Documentation and Information Service (LARRDIS), Members' Reference Service, Reference Note .No. 30/Rn/Ref./October/2015

Phillip Daniel Daninga, Zhang Qiao (2014), □ Factors affecting attitude of Farmers towards drought insurance in Tanzania□, International Journal of Science Commerce and Humanities Volume No 2 No. 8 November 2014.

Pooja Kansra (2016), "Awareness and Willingness of Farmers towards Crop Insurance in Punjab", Volume XIV, No.1, IRDAI Journal, January, 2016.

Pooja Kansra (2016), —Awareness and Willingness of Farmers towards Crop Insurance in Punjab□, Volume XIV, No.1, IRDAI Journal, January, 2016.12.

S. Subashini (2016), —Crop Insurance an Indian Perspective Outlook- A

painful cryings fromfarmers□, Volume XIV, No.1, IRDAI Journal, January, 2016

Pradeepika (2017) Insights into the New Crop Insurance Scheme in Haryana State Int. J. Adv. Res. 5(7), 1797-1802

Robert Aidoo, James Osei Mensah, Prosper Wie, Dadson Awunyo-vitor (2014), —Prospects of Crop Insurance as a Risk Management Tool among Arable Crop Farmers in Ghana□, Asian Economic and Financial Review, 2014, 4(3):341-354

S. Subashini (2016),"Crop Insurance an Indian Perspective Outlook- A painful cryings from farmers", Volume XIV, No.1, IRDAI Journal, January, 2016

S.M.Uvaneswaran T.Mohanapriya (2014),"Farmers„ Perception and Awareness about Crop Insurance in Tamilnadu – A Descriptive Analysis", Intercontinental Journal of Marketing Research Review, ISSN: 2321-0346-Online ISSN: 2347- 1670-Print Impact Factor Value: 0.612, Volume 2, Issue 3 (March, 2014)

Subash, S.P, Pavithra, S and Suresh Pal (2017) Pradhan Mantri Fasal Bima Yojana (PMFBY): Challenges and way forward ICAR-National Institute of Agricultural Economics and Policy Research, New Delhi.

Tapas Kumar Parida (2016), "Pradhan Mantri Fasal Bima Yojana (PMFBY): Issues and Concern", Volume XIV, No.1, IRDAI Journal, January, 2016.

Y. Rajaram and Chetana B.S (2016) A study on current crop insurance schemes with a special reference to Pradhan Mantri Fasal Bhima Yojana (PMFBY) and restructured Weather Based Crop Insurance Scheme, International Journal of Combined Research & Development (IJCRD) Volume: 5; Issue: 7; July -2016.

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Appendix-I

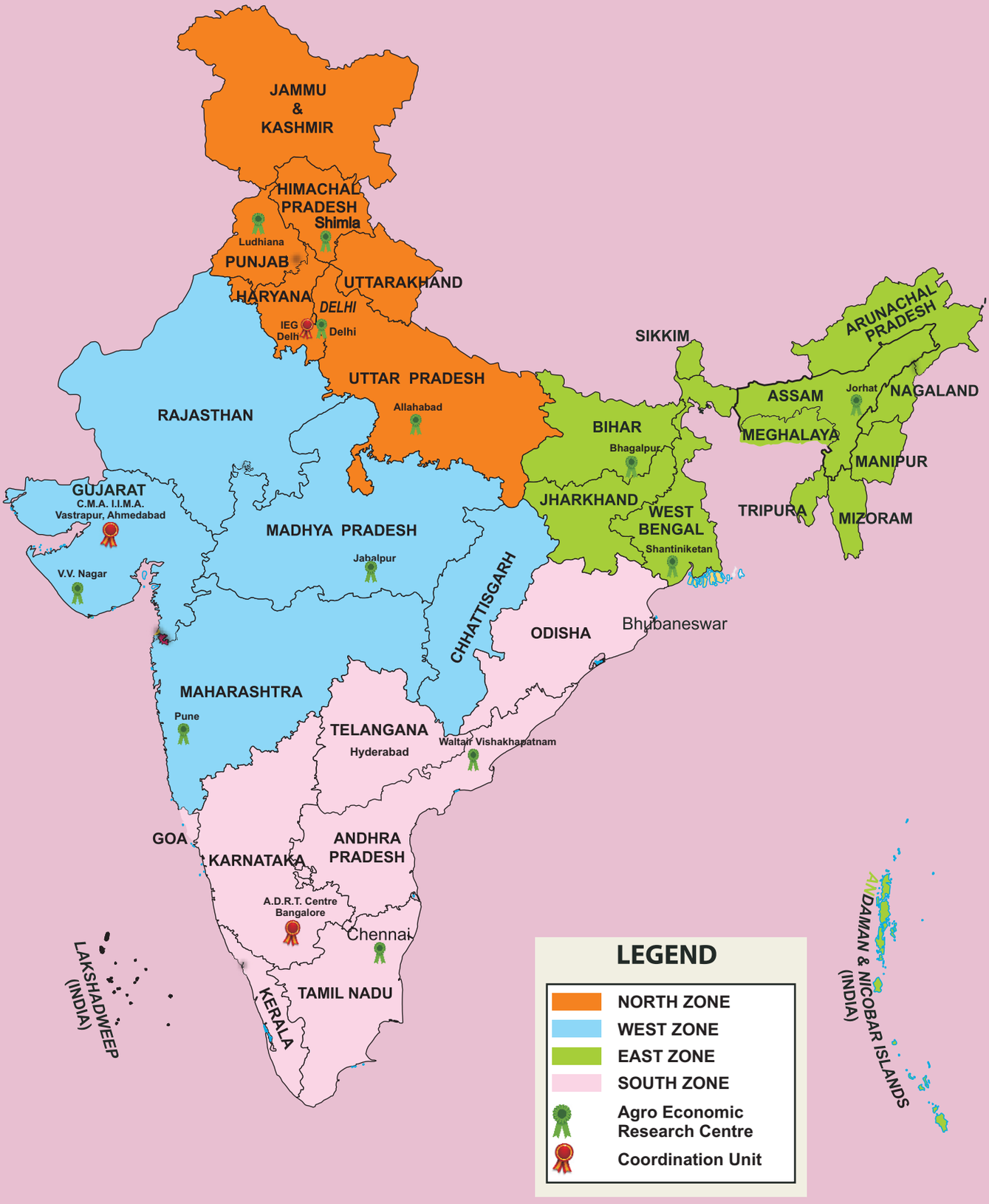
Coordinator's Comment on the Draft Report and Action Taken

Title of the Draft Report Examined	:	Performance Evaluation of Pradhan Mantri Fasal Bima Yojana (PMFBY) in Madhya Pradesh
Date of receipt of the draft report	:	31st March, 2018
Date of dispatch of the comment	:	27th June, 2018

Comments

Please ensure that your tables are updated as per the new data provided to you. Also, the numbers need to be converted to lakhs or crores as indicated in the table 2.1.

Action Taken : Correction made as Suggested



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