



Assessing the performance of Pradhan Mantri Fasal Bima Yojana in India

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Abstract

Crop insurance is a formal and most effective way to mitigate the agricultural risk of farmers. The Indian government has introduced many crop insurance schemes before independence as well as after independence. The prime objective of this paper is to analyze the performance of Pradhan Mantri Fasal Bima Yojana State wise and season wise from 2016 to 2020. The performance is measured in terms of number of loanee farmers covered, number of non loanee farmers covered, area insured, sum insured, premium collected, claim payment and number of farmer's benefited from 2016 to 2020. A simple percentage analysis has been applied and found that only some States are getting for benefit from this scheme like Madhya Pradesh, Rajasthan, Maharashtra, and Uttar Pradesh. The study concludes that the scheme is far away from the objectives set at the time of implementation of this scheme but participation has been increased constantly.

Keywords: crop insurance, PMFBY, sum insured, premium, claim

Introduction

Farming is an old profession as civilization but since then it has been a risky profession. Farming is affected by natural calamities that are beyond the control of the farming community. People engaged in it and their related businesses have to face several risks such as personal risk, health risk, price risk, credit risk, etc. A vision has been providing insurance coverage for the agricultural sector for over 100 years. J.S. Chakravarti of Mysore state wrote several articles between 1915 and 1920 on providing insurance coverage to farmers for their crops, and he proposed "Rainfall index insurance. J.S. Chakravarti proposed this to protect farmers from severe droughts, which used to result in lower crop yields and revenue losses (Mishra, 1995; Vyas and Singh, 2006) [3, 8]. First-Ever Crop Insurance Scheme The scheme was started in 1972. It was the first crop insurance scheme in India. The scheme has introduced by the General Insurance Corporation of India (Singh, 2010) [7]. The total numbers of farmers covered were 3110 and the premium collected was 4.54 lakh against the claim of 37.88 lakh (Bhise et. al., 2007) [1]. Because of the high premium-claim ratio, this scheme was discontinued because it was economically feasible and ineffective for large-scale implementation. This was based on the area approach in the area approach indemnity payment and losses have been determined for the whole area (notified area) (Singh, 2010) [7]. The total number of farmers covered under this scheme was 6.17 lakh and the premium collected from participants was 1.97 crores against the claim of 1.57 crores (Singh, 2010) [7]. The PCIS had many limitations, such as the reality that it was only available to loanee farmers, the unit of insurance was large, there was little awareness among farmers, and crops such as cotton and sugarcane were excluded from the scheme. In the entire period of this scheme total number of farmers covered was 7.63 crores and the amount of premium paid by the farmers was 403.56 crores and the claim amount was 230.45 crores. However, CCIS had some limitations, such as only covering notified crops (food crops and oilseeds), with no scope for

horticulture or commercial crops. The scheme was not adaptable. Because the CCIS was only available to loanee farmers, non-loanee farmers were completely ignored. The Experimental Crop Insurance Scheme was introduced in 1997 on demand of State Governments because the State Governments were demanding for modifying the comprehensive crop insurance scheme from time to time. Due to administrative and financial troubles, the scheme was withdrawn after one season, and the Central Government introduced a new crop insurance scheme, the National Agricultural Insurance Scheme, in 1999, based on its experience (NAIS). It has covered 454555 farmers and the sum insured was 168.11 crores at the premium 2.84 crores claim against having paid 37.80 crores. The Comprehensive Crop Insurance Scheme was replaced by the National Agriculture Insurance Scheme. National Agriculture Insurance Scheme (NAIS) had introduced in the Rabi season 1999-2000 (Bhende, 2005; Vyas and Singh, 2006; Raju and Chand, 2008) [2, 6, 8]. It was introduced in 2003 by the government of India because previous initiatives taken by the government are considered to yield fluctuation due to natural disasters and income fluctuation due to declines in the market price. Weather Based Crop Insurance Scheme protects the farmers from losses due to the adverse condition of weather parameters like rainfall, temperature, humidity, etc. (Barnett and Mahul, 2007; Nair, 2010) [4, 5].

The problem in the National Agriculture Insurance Scheme and all previous schemes were only provided to protect the farmers against yield fluctuation. The farmers have to face revenue loss due to the decline in the market price of the agricultural commodities. To protect the farmers from variability in yield and market price government introduced the farm income insurance scheme on a pilot basis during the Rabi season 2003-04. It was based on the homogeneous area approach in respect of wheat and rice crops only. The number of farmers covered was 4.15 lakh and the premium was collected at 28.5 crores against the claim of 28.75 crores. The scheme has also protected the farmers from loss

due to fluctuations in crop yield. It had worked as a component of the National Agriculture Insurance Scheme. It was started from Rabi season 2010-2011 on a pilot basis. The scheme was implemented in the 50 districts during this season. Farmers covered were 2.29 lakh and the premium collection was 824.38 crores against the claim of 234.27 crores.

The government of India has been introducing many insurance programs since independence but in 1972 the first ever crop insurance was for specific areas as well as for specific crops. After that Pilot crop insurance scheme has introduced than comprehensive crop insurance scheme which was linked with the agriculture credit after that national agriculture crop insurance scheme has introduced at the national level but there had so many limitations so modified national crop insurance has introduced weather based and restructured weather based crop insurance program has been implemented In current time the PMFBY is operating all over India. The scheme has introduced in the Kharif season of 2016 with the concept of the One Nation-One Scheme by the central government. The operation of the scheme has been started on the 1st of April 2016 with central government allocations of rupees 5500 crores in budget 2016-17. The National Agriculture Insurance Scheme (NAIS) and Modified National Agriculture Insurance Scheme (MNAIS) both were replaced by the Pradhan Mantri Fasal Bima Yojana. The main purpose of this scheme is to protect the income of farmers to stabilize their income of farmer and motivate them to adopt new innovative techniques in farming. This scheme covers all the

crops for which past yield data is available and the crop cutting experiment can be conducted. The rates of premium are 2% for Kharif crops, 1.5% for rabi crops, and 5% for annual commercial and horticulture crops, and the difference between the premium paid by the farmers and insurer rate of premium is shared by the Central and State governments equally. The scheme was implemented on an area approach basis. It has a similar discipline for loanee and non-loanee farmers. The amount of the claim is credited electronically to the farmer’s bank account.

The prime objective of this study is to analysis the performance of PMFBY in respect of total number of farmer insured, area insured, sum insured, premium paid by the farmers, state government shares in premium, center government shares in premium, claim approved, claim payment, and total number of farmers benefited.

Data and methodology

The present study is descriptive in nature so to describe the performance of Pradhan Mantri Fasal Bima Yojana (PMFBY) only secondary data has been used. The data has been collected from the official website of agriculture insurance cooperation of India limited from 2016 to 2020. A simple percentage has been calculated for each element of this scheme by using a formula such as:-

$$\text{Percentage of loanee Farmers} = \frac{\text{loanee farmers from state}}{\text{total number of loanee farmers in this scheme}} \times 100$$

$$\% \text{ of Non loanee Farmers} = \frac{\text{non loanee farmers from state}}{\text{total number of non loanee farmers in this scheme}} \times 100$$

Table 1: State Wise Performances from 2016 to Kharif Season 2020 (PMFBY)

State / UT	Loanee Farmers	Non Loanee Farmers	Area Insured	Sum Insured	Premium	Claims Paid	Farmers Benefitted
Andhra Pradesh	1.54	0.19	0.87	1.63	1.09	0.81	0.49
Assam	0.08	4.33	1.10	1.97	0.57	0.00	0.00
Bihar	2.05	0.06	1.31	1.66	1.49	1.09	0.62
Chhattisgarh	3.67	4.59	3.29	5.25	3.16	1.91	1.11
Gujarat	2.79	0.03	2.48	3.48	6.01	5.70	2.47
Himachal Pradesh	1.05	0.04	0.27	0.23	0.10	0.10	0.63
Haryana	1.96	0.16	1.86	3.16	2.40	2.27	1.13
Jharkhand	0.34	2.37	0.56	0.76	0.79	0.10	0.21
Kerala	0.13	0.01	0.07	0.16	0.07	0.09	0.06
Karnataka	0.87	4.53	2.61	2.47	3.65	5.88	4.57
Madhya Pradesh	33.07	3.67	40.22	34.17	31.28	23.64	12.82
Maharashtra	6.26	53.90	13.53	11.72	19.23	27.16	45.19
Manipur	0.01	0.01	0.01	0.01	0.01	0.01	0.03
Meghalaya	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Odisha	5.34	2.87	1.08	1.75	2.45	1.03	0.95
Puducherry	0.00	0.01	0.00	0.00	0.00	0.03	0.02
Rajasthan	20.49	0.27	15.76	11.05	11.95	14.51	13.46
Sikkim	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tamil Nadu	1.71	17.40	3.33	5.15	9.94	12.30	8.85
Telangana	1.87	0.17	1.28	2.38	0.92	0.28	0.33
Tripura	0.01	0.16	0.01	0.02	0.01	0.00	0.01
Uttar Pradesh	13.15	0.27	8.11	9.74	3.77	2.23	4.73
Uttarakhand	0.80	0.40	0.40	0.70	0.12	0.07	0.35
West Bengal	2.83	4.55	1.84	2.53	0.98	0.79	1.96

(Sources: - Author calculations based on data collected from the official site of AIC)

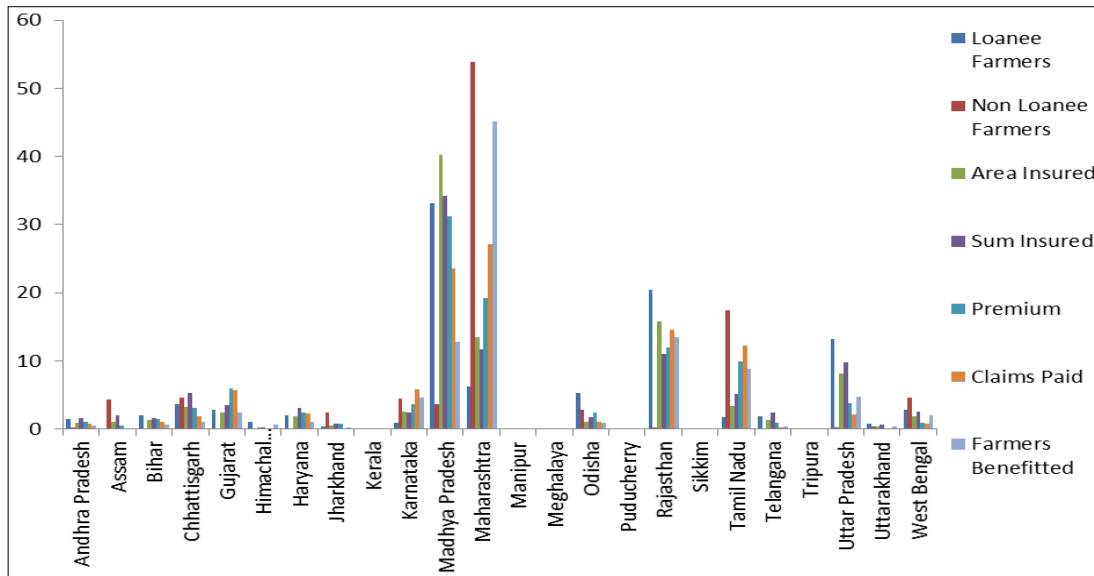


Fig 1: States wise Performance of PMFBY

Table 1 and figure 1 show that most of the loanee farmers were covered from Madhya Pradesh (33.07%) after Rajasthan (20.49%) followed by Uttar Pradesh (13.15%) than Maharashtra (6.26%), and Odisha (5.34%). Most non-loanee farmers are insured from Maharashtra (53.90%) after that Tamilnadu (17.40%) followed by Chhattisgarh (4.59%), than West Bengal (4.55%), and Karnataka (4.53%). Madhya Pradesh (40.22%) has been insured most area after that Rajasthan (15.76%), followed by Maharashtra (13.53%) than Uttar Pradesh (8.11%), and Tamilnadu (3.33%). The results revealed that premium were paid by the Madhya Pradesh (31.28%) farmers after that Maharashtra (19.23%), followed by Rajasthan (11.95%), than Tamilnadu (9.94%),

and Gujarat (6.01%). Maharashtra (27.16%) leads in obtaining claims after Madhya Pradesh (23.64%), Rajasthan (14.51%), Tamilnadu (12.30%), and Karnataka (5.88%). Maharashtra (45.19%) is at the forefront of getting benefits to farmers after Rajasthan (13.46%), Madhya Pradesh (12.82%), Tamilnadu (8.85%), and Uttar Pradesh (4.73%). The performance of this particular scheme in special reference to Haryana was very insufficient in all aspects loanee farmers covered (1.96%), non-loanee farmers covered (0.16%), the area covered (1.86%), sum insured (3.16%), premium (2.40%), claims (2.27%) and farmers benefited (1.13%) respectively.

Table 2: Kharif Seasons Performance of PMFBY from 2016 to Kharif Season 2020

Seasons	Loanee Farmer	Non-Loanee Farmer	Area Insured (Ha.)	Sum Insured	No. of farmers Benefitted
Kharif 2016	26.53	17.50	24.23	22.33	14.43
Kharif 2017	18.06	12.72	16.73	15.87	21.20
Kharif 2018	9.43	7.67	12.49	13.31	9.42
Kharif 2019	19.15	41.27	23.18	23.57	44.39
Kharif 2020	26.84	20.83	23.36	24.93	10.56

(Sources: - Author calculations based on data collected from the official site of AIC)

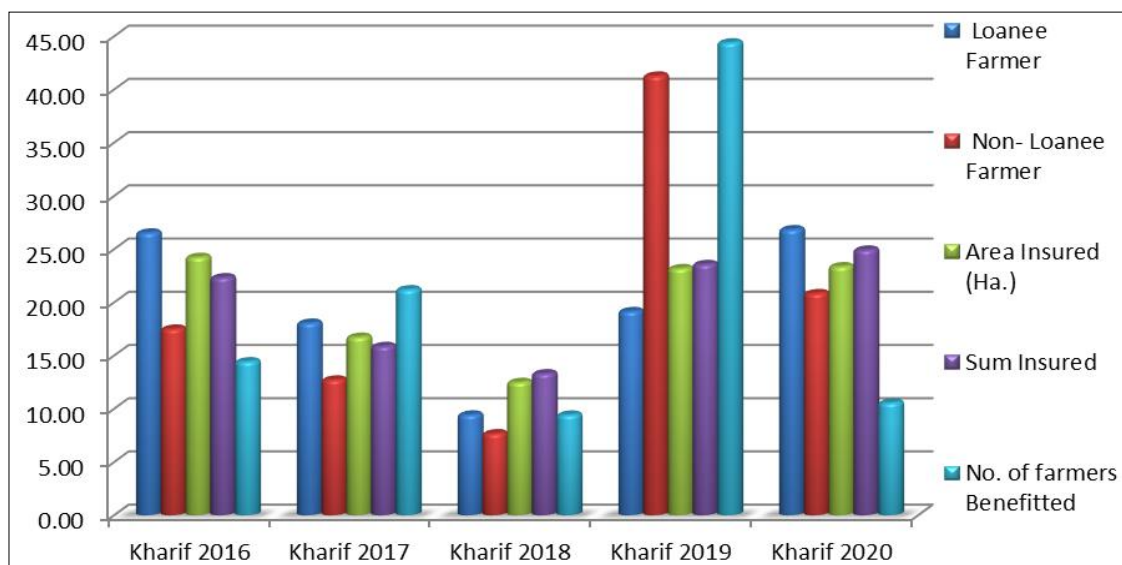


Fig 2: Kharif Seasons Performance of PMFBY

Table 2 and figure 2 show the performance of Pradhan Mantri Fasal Bima Yojana in respect of the number of loanee farmers' applications, the number of non-loanee farmers' applications, total area insured, the total sum insured, and the total number of farmers benefited against claim payment. In terms of loanee farmers, the highest is season Kharif 2020 (26.84) followed by 2016 (26.53), 2019 (19.15), 2017 (18.06), and 2018 (9.43). In terms of the total number of non-loanee farmers' applications has the highest in the season Kharif 2019 (41.27) among all seasons followed by 2020 (20.83), 2016 (17.50), 2017 (12.72), and

2018 (7.67). In respect of total area insured season 2016 (24.23) is leading followed by 2020 (23.36), 2019 (23.18), 2017 (16.73), and 2018 (12.49). In terms of the sum insured the highest in the season was 2020 (24.93) followed by 2019 (23.57), 2016 (22.33), 2017 (15.87), and 2018 (13.31). In terms of the total number of farmers who benefited has the highest in the Kharif season in 2019 (44.39) followed by 2017 (21.20), 2016 (14.43), 2020 (10.56), and 2018 (9.42). From the above findings, we can reveal that the season 2018 has the lowest performance among all seasons.

Table 3: Kharif Seasons Performance of PMFBY from 2016 to Kharif Season 2020

Seasons	Farmers Share in Premium	GOI Share in Premium	State Share in Premium	Gross Premium	Approved Claims	Claim Paid
Kharif 2016	21.74	15.85	15.79	16.65	12.51	12.70
Kharif 2017	16.19	15.32	15.02	15.31	25.70	26.08
Kharif 2018	13.21	12.76	12.51	12.71	14.00	12.83
Kharif 2019	25.04	27.79	27.72	27.37	39.32	39.85
Kharif 2020	23.81	28.28	28.96	27.94	8.47	8.54

(Sources: - Author calculations based on data collected from the official site of AIC)

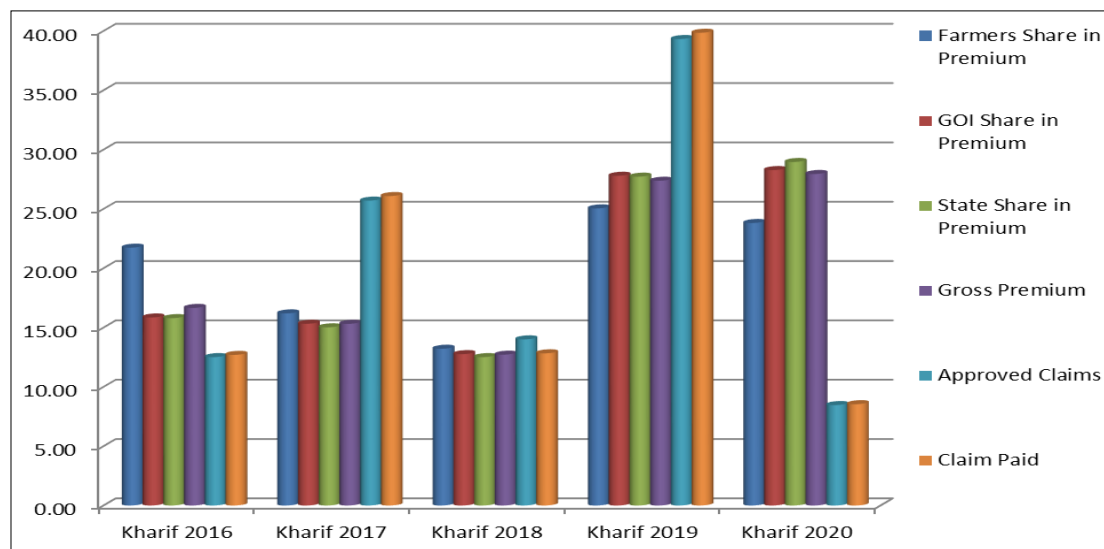


Fig 3: Kharif Seasons Performance of PMFBY

Table 3 and figure 3 show the performance of PMFBY in terms of farmers' share in premium, the government of India's share in premium, state government share in premium, gross premium, approved claims, and claims paid to the farmers. Firstly, the performance is measured in terms of farmers' share in premium and found that season 2019 (25.04) has the highest among the all-season followed by 2020 (23.81), 2016 (21.74), 2017 (16.19), and 2018 (13.21). Secondly, the performance is measured in terms of GOI share in premium and found that season 2020 (28.28) has the highest followed by 2019 (27.79), 2016 (15.85), and 2017 (15.32) and 2018 (12.76). Thirdly, the performance is measured in terms of state governments' share in premium and found that season 2020 (28.96) is leading after 2019

(27.72), followed by 2016 (15.79), 2017 (15.02), 2018 (12.51). Fourthly, the performance is measured in terms of gross premium and found that season 2020 (27.94) is leading after 2019 (27.37) followed by 2016 (16.65), 2017 (15.32), and 2018 (12.71). Furthermore, the performance is measured in terms of approved claims and found that season 2019 (39.32) is leading after 2017 (25.70), followed by 2018 (14.00), 2016 (12.51), and 2020 (8.47). In the end, the performance is measured in terms of the claim paid to the farmers and found that season 2019 (39.85) is leading after that 2017 (26.08) followed by 2018 (12.83), 2016 (12.70), and 2020 (8.54).

Table 4: Rabi Seasons Performance of PMFBY from 2016 to Rabi Season 2020

Seasons	Loanee Farmer	Non Loanee Farmer	Area Insured	Sum Insured	No. of farmers Benefitted
Rabi 2016	29.92	12.73	27.10	23.28	29.00
Rabi 2017	12.15	6.27	14.08	13.43	10.48
Rabi 2018	12.38	7.71	14.65	14.10	22.62
Rabi 2019	17.01	26.61	16.77	18.53	37.91
Rabi 2020	28.54	46.68	27.39	30.66	0.00

(Sources: - Author calculations based on data collected from the official site of AIC)

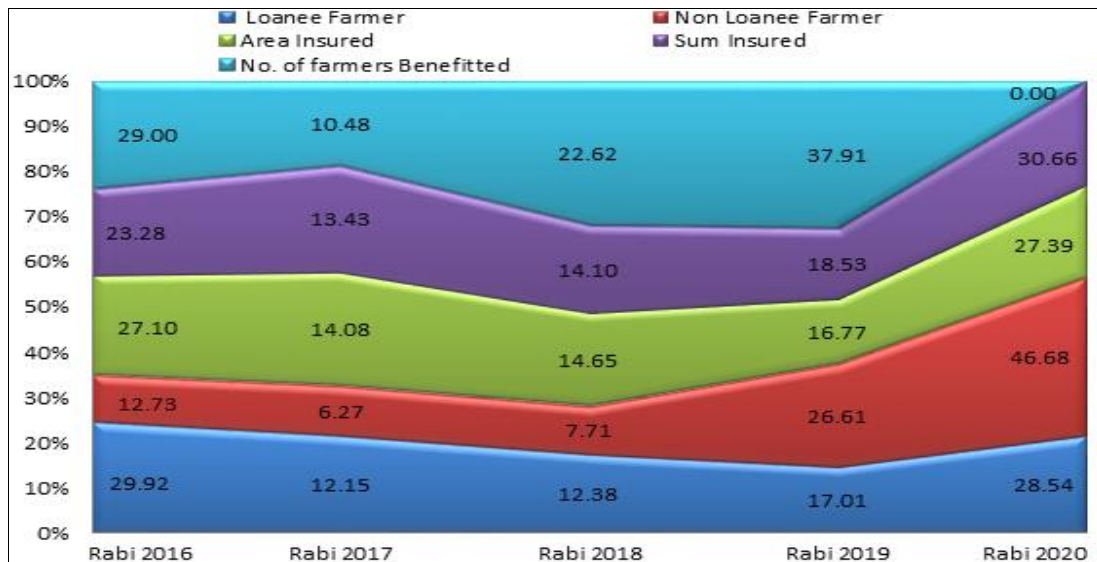


Fig 4: Rabi Seasons Performance of PMFBY

Table 4 and figure 4 show the performance of Pradhan Mantri Fasal Bima Yojana in respect of the number of loanee farmers' applications, the number of non-loanee farmers' applications, total area insured, the total sum insured, and the total number of farmers benefitted against claim payment. Terms of the total number of loanee farmers' applications have the highest in 2016 (29.92) after 2020 (28.54) followed by 2019 (17.01), 2018 (12.38), and 2017 (12.15). In terms of the total number of non-loanee farmers' applications and found that season 2020 (46.88) is leading among all the seasons after 2019 (26.61) followed by 2016 (12.73), 2018 (7.71), and 2017 (6.27). In terms of total area insured under Rabi, seasons have the highest in 2020

(27.39) after 2016 (27.10) followed by 2019 (16.77), 2018 (14.65), and 2017 (14.08). Furthermore, the performance is measured in terms of the sum insured and found that season 2020 (30.66) is leading after that 2016 (23.28), followed by 2019 (18.53), 2018 (14.10), and 2017 (13.43). In the end, the performance is measured in terms of the total number of farmers who benefitted against the claim payment and found that season 2019 (37.91) is the leading after that 2016 (29.00) followed by 2018 (22.62) and 2017 (10.48). The table shows that in season 2020 farmers did not receive any claims because the number of farmers benefitted against is nil.

Table 5: Rabi Seasons Performance of PMFBY from 2016 to Rabi Season 2020

Seasons	Farmers Share in Premium	GOI Share in Premium	State Share in Premium	Gross Premium	Approved Claims	Claim Paid
Rabi 2016	24.10	13.95	12.53	14.99	32.51	32.62
Rabi 2017	13.65	10.97	9.85	10.92	12.95	12.97
Rabi 2018	14.70	12.31	11.06	12.15	25.49	25.57
Rabi 2019	19.73	21.79	19.59	20.48	29.05	28.85
Rabi 2020	27.81	40.99	46.97	41.45	0.00	0.00

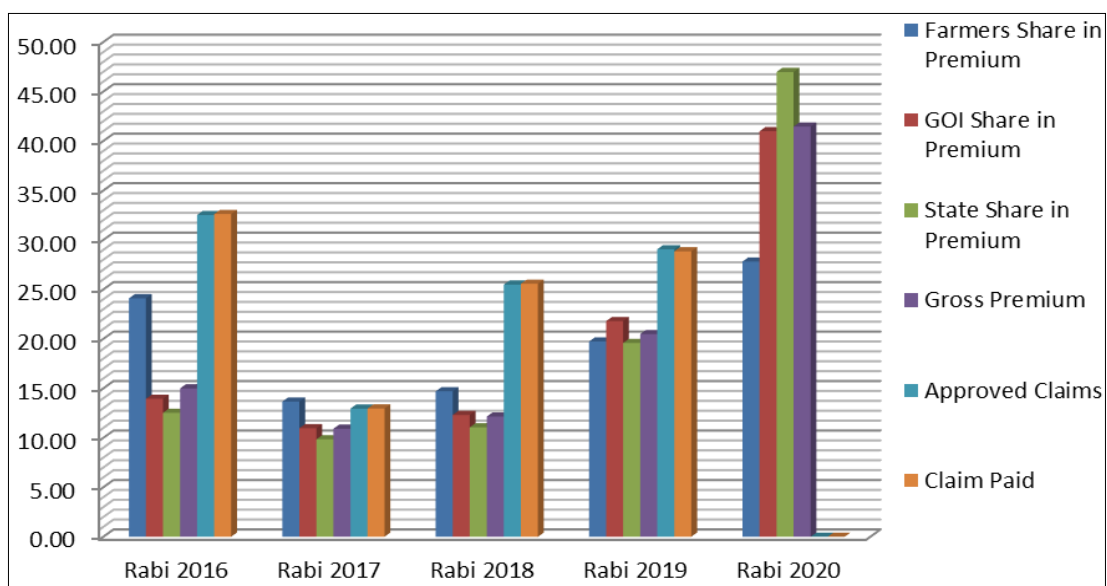


Fig 5: Rabi Seasons Performance of PMFBY

Table 5 and figure 5 show the performance of PMFBY in terms of farmers' share in premium, the government of India shares in premium, state government's share in premium, gross premium, approved claims, and claims paid to the farmers. Firstly, the performance is measured in terms of farmers' share in premium and found that season 2020 (27.81) has the highest among all seasons followed by 2016 (24.10), 2019 (19.73), and 2018 (14.70), and 2017 (13.65). Secondly, the performance is measured in terms of GOI share in premium and found that season 2020 (40.99) has the highest followed by 2019 (21.79), 2016 (13.95), 2018 (12.31), and 2017 (10.97). Thirdly, the performance is measured in terms of state governments' share in premium and found that season 2020 (46.97) is leading after 2019 (19.59), followed by 2016 (12.53), 2018 (11.06), 2017 (9.85). Fourthly, the performance is measured in terms of gross premium and found that season 2020 (41.45) is leading after 2019 (20.48) followed by 2016 (14.99), 2018 (12.15), and 2017 (10.92). Furthermore, the performance is measured in terms of approved claims and found that season 2016 (32.51) is leading after 2019 (29.05), followed by 2018 (25.49), and 2017 (12.95). In the end, the performance is measured in terms of claims paid to the farmers and found that season 2016 (39.85) is leading after 2019 (28.85) followed by 2018 (25.57), and 2017 (12.97). Approved claim and claim paid amount is nil.

Discussion

the prime motive of the study is to analyze the overall performance of Pradhan Mantri Fasal Bima Yojana in terms of total number of farmers covered total number of area covered total number of farmers benefited claim payment claim received premium and total number of farmers benefited under this scheme. Firstly findings of the study show that some States organic getting more benefit as compared to other participant States such as Maharashtra, Madhya Pradesh, Uttar Pradesh, Rajasthan, Karnataka and Tamil-Nadu in terms of total number of farmers covered, area insured, sum insured, premium, claim paid and total number of farmers benefited. Secondly, the study analyze the Kharif seasons performance from 2016 to 2020 the finding shows that season 2018 had poor performance among all the seasons. Thirdly the analysis is related to the Rabi seasons and found that the farmers are not received any claim payment from the schemes after agricultural losses that are not good enough for the better performance of this scheme. There is a lot of scope for rectification in this scheme because it is not performing well in terms of financial

Conclusion

About 60 percent of the population is engaged in agriculture and its allied activities there is a need to protect them from agricultural losses after natural calamities. PMFBY focus to protect farmers from losses with the mandatory participation of loanee farmers. But in 2020 the scheme has been optional for both types of farmers (Loanee and Non-Loanee). From the conclusive findings of this article, we can conclude that delay in claim settlement and only a few states are getting benefits from this scheme. There is a huge variation in the numbers of farmers covered, sum insured, area insured, the premium collected, claim payments, and the total number of farmers benefited under the umbrella of this scheme. Lack of awareness and transparency and unwanted delay in claim

payments, the complexity of insuring crops, and administration inefficiencies are keeping farmers to demand crop insurance. PMFBY is currently not able to establish sustainability for all participants because of divergence between central and state governments. Technological advancement, region-specific programs, inclusion of micro and small farmers, insurance unit level awareness program, timely payment of the claim, low insurance cost along with a comprehensive administration framework to protect and assist farmers' agricultural income can make crop insurance work more effectively for farmers than insurance companies or implementing agencies and Governments.

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