

STATE-WISE AND SEASONS WISE STATUS OF RESTRUCTURED WEATHER BASED CROP INSURANCE IN INDIA

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ABSTRACT

Agriculture is an old business as civilization agriculture and its allied activities play an important role in Indian economic development. The prime aim of this paper is to evaluate the performance of restructuring weather-based crop insurance in India. Performance is measured in terms of the total number of loanee farmers, the total number of non-loanee farmers, area insured, sum insured, farmers share in premium, the government of India share in premium, states government share in premium, gross premium, claim approved, claim paid and the total number of farmers benefited seasons wise and as well as state wise. The secondary data has been collected from the Rabi season 2016 to Kharif season 2020 and analyzed by simple percentage analysis. The study found that the performance has been poor in states Uttar Pradesh and West Bengal because they are getting less than 1% in each element of this scheme, and Maharashtra has found leading states in all each parameter of this scheme. The seasons-wise performance indicated that the performance had been inadequate in the initial seasons and the amount of claims has been pending by Kharif 2020. The study concludes that challenges should be addressed and removed for making this program efficient in the Indian context.

Keywords: Crop Insurance, Area Insured, Farmers Insured, Gross Premium, and Claim

Introduction

Agriculture is the most important business of the Indian economy agriculture and its allied sectors such as dairying, livestock, and fisheries contribute near about 18.8 % in gross value added (Economic Survey, 2021-22). Weather is an important factor that influences the

agriculture and income of the farmers who lived in rural areas (Mahul et. al., 2012). In the recent era, the research and all the working development institution are exploring the alternative of traditional crop insurance to protect the agricultural losses. It has many uncertainties because of its dependence on the weather (Mahul and Stutley, 2010). Weather index can be the alternative for mitigating the natural disaster risks efficiently (Nair, 2010). Weather index insurance pays indemnities based on realisations of a weather index that is directly associated with actual losses rather than overall losses experienced by the insured person (Barnett and Mahul, 2007). It was introduced in 2003 by the government of India because previous initiatives taken by the government are considered the yield fluctuation due to natural disasters and income fluctuation due to declines in the market price (Nair, 2010). Weather Based Crop Insurance Scheme protects the farmers from losses due to the adverse condition of weather parameters like rainfall, temperature, humidity etc (Rao, 2010). It is optional for non loanee farmers they can choose one scheme between Pradhan Mantri Fasal Bima Yojana and Weather Based Crop Insurance Scheme. All notified crops such as oilseeds, commercial crops, millets, pulses, and cereals for the notified areas are covered under this scheme. The Weather Based Crop Insurance Scheme seeks to protect insured farmers from financial loss as a result of crop loss precipitated by adverse weather such as rainfall, temperature, wind, humidity, and so on. WBCIS reimburses cultivators for deemed crop losses by using weather parameters as a "proxy for crop yields." Payout structures are designed to compensate for losses deemed to have happened as a result of the weather triggers. The scheme will cover the following major weather perils that are deemed to cause "Adverse Weather Occurrence," resulting in crop loss: Rainfall-deficit, excess rainfall, Unseasonal Rainfall, Rainy Days, Dry spell, Temperature–High temperature, Low temperature, Relative Humidity, Wind Speed A combination of the above-mentioned hailstorm and cloud-burst may also be included. The perils listed above are illustrative and not exhaustive, and any expansions or removals may be considered by the State Government in consultation with insurance companies based on the availability of relevant data. The State Government shall consider covering such perils that are capable of causing severe and quantifiable loss can be induced explicitly or implicitly by modifications in measurable weather parameters to capture losses during different weather conditions, and have demonstrated a correlation with quantifiable yield losses. In 2016 the scheme has been restructured and named restructured weather-based crop insurance scheme. The present study is conducted to analyze the performance of weather index insurance in India

Data and Methodology

To achieve the current study objective secondary data is used that is collected from the reports of agriculture insurance company ltd. (AIC) from the implementation to Kharif season 2020. All

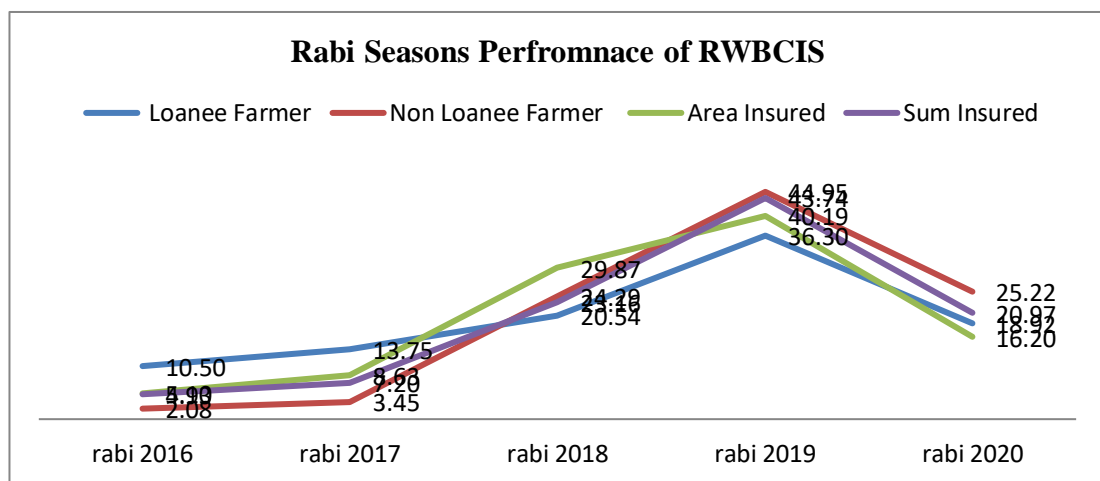
the aspects related to this particular crop insurance scheme have been included such as the total number of loanee farmers applications, the total number of non-loanee farmers applications, area insured, sum insured, the premium collected, claim approved, claim paid and total number of farmers benefited against claim payment. The simple percentage has been used that is calculated by using a single element divided by the total of that particular element for an example

Area Insured in Season 2016/Total Area Covered Under This Scheme.

Table 1. Performance of Restructure Weather Based Crop Insurance Scheme Rabi Seasons from 2016-2020

Seasons	Loanee Farmer	Non Loanee Farmer	Area Insured	Sum Insured
Rabi 2016	10.50	2.08	5.10	4.93
Rabi 2017	13.75	3.45	8.63	7.20
Rabi 2018	20.54	24.29	29.87	23.16
Rabi 2019	36.30	44.95	40.19	43.74
Rabi 2020	18.92	25.22	16.20	20.97

(Source:- www.aicofindia.com)



(Graph 1)

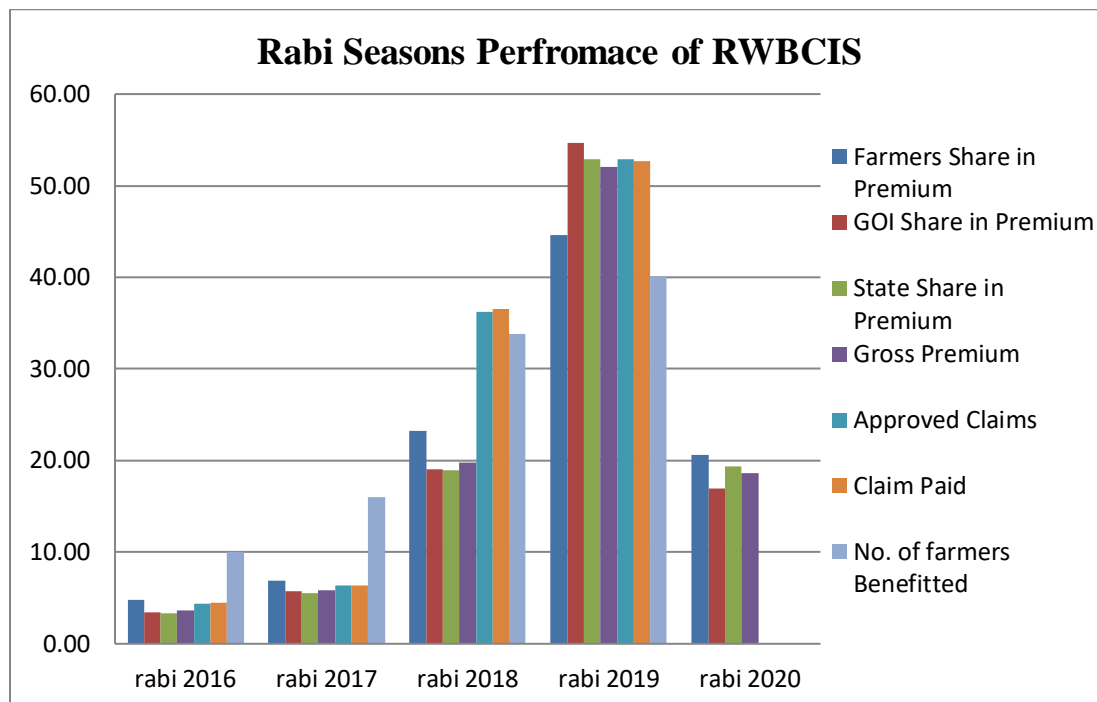
Table 1 and Graph 1 show the performance of restructuring weather-based crop insurance scheme for the season rabi 2016 to rabi 2020 in terms of the total number of applications by loanee farmers, the total number of applications by non-loanee farmers, area insured in hectare, and total amount of sum insured. Firstly in terms of loanee farmers study found that season 2019 (36.30) is leading followed by 2018 (20.54), 2020 (18.92), 2017 (13.75), and 2016 (10.50). Secondly, the performance is measured in terms of total number of non loanee farmers applications and found that season 2019 is the leading season among all-seasons followed by 2020 (25.22), 2018 (24.29), 2017(3.45), and 2016 (2.08). Thirdly, the performance is measured In terms of total area insured under this scheme and found that for Rabi season 2019 (40.19) is the leading season among of the all-seasons area insured amount after that 2018 (29.87) followed by 2020 (16.20), 2017 (8.63) and 2016 (5.10). In this table, the last parameter for measuring performance is the total amount of sum insured and found that 2019 (43.74) is leading season that 2018 (23.16), followed by 2020 (20.97), 2017 (7.20), and 2016 (4.93). So, we can conclude that the Rabi season 2019 has been the leading performer season among all the seasons, and Rabi season 2016 has the low performance among all the seasons.

Table 2. Performance of Restructure Weather Based Crop Insurance Scheme Rabi Seasons from 2016-2020

Seasons	Farmers Share in Premium	GOI Share in Premium	State Share in Premium	Gross Premium	Approved Claims	Claim Paid	No. of farmers Benefitted
Rabi 2016	4.75	3.48	3.30	3.64	4.42	4.46	10.06
Rabi 2017	6.87	5.79	5.48	5.87	6.38	6.41	15.97
Rabi 2018	23.25	19.07	18.95	19.81	36.28	36.49	33.87
Rabi 2019	44.56	54.68	52.91	52.03	52.92	52.65	40.10
Rabi 2020	20.56	16.98	19.36	18.65	0.00	0.00	0.00

(Source:- www.aicofindia.com)

Table 2 and Graph 2, show the performance of RWBCIS in terms of farmers share in premium, the government of India share in premium, state government shares in premium, gross premium approved claim, claim paid to farmers and number of farmers benefited from the season Rabi 2016- 2020. The study found that season 2019 is the leading season in all the parameters of the scheme and for season 2020 there is a nil amount for claim approved, claim paid and number of farmers benefited respectively. In terms of farmers share in premium has the highest share in Rabi season 2019 (44.56) followed by 2018 (23.25), 2020 (20.56) 2017 (6.87) and 2016 (4.75). In terms of government share in premium has the highest share in Rabi season 2019 (54.68) followed by 2018 (19.07), 2020 (16.98), 2017 (5.79), 2016 (3.48). In terms of state government shares in premium has the highest in the Rabi season 2019 (52.91) followed by 2020 (19.36), 2018 (18.95), 2017 (5.48), and 2016 (3.30). In terms of gross premium has highest in Rabi season 2019 (52.03) followed by 2018 (19.81), 2020 (18.65), 2017(5.87) and 2016 (3.64). In terms of the claim approved has the highest in Rabi season 2019 (52.92) followed by 2018 (36.28), 2017 (6.38), and 2016 (4.42). In terms of the claim paid has the highest in Rabi season 2019 (52.65) followed by 2018 (36.49), 2017 (6.41), and 2016 (4.46). In terms of total number of farmers benefited has the highest in Rabi season 2019 (40.10) followed by 2018 (33.87), 2017 (15.97), and 2016 (10.06).

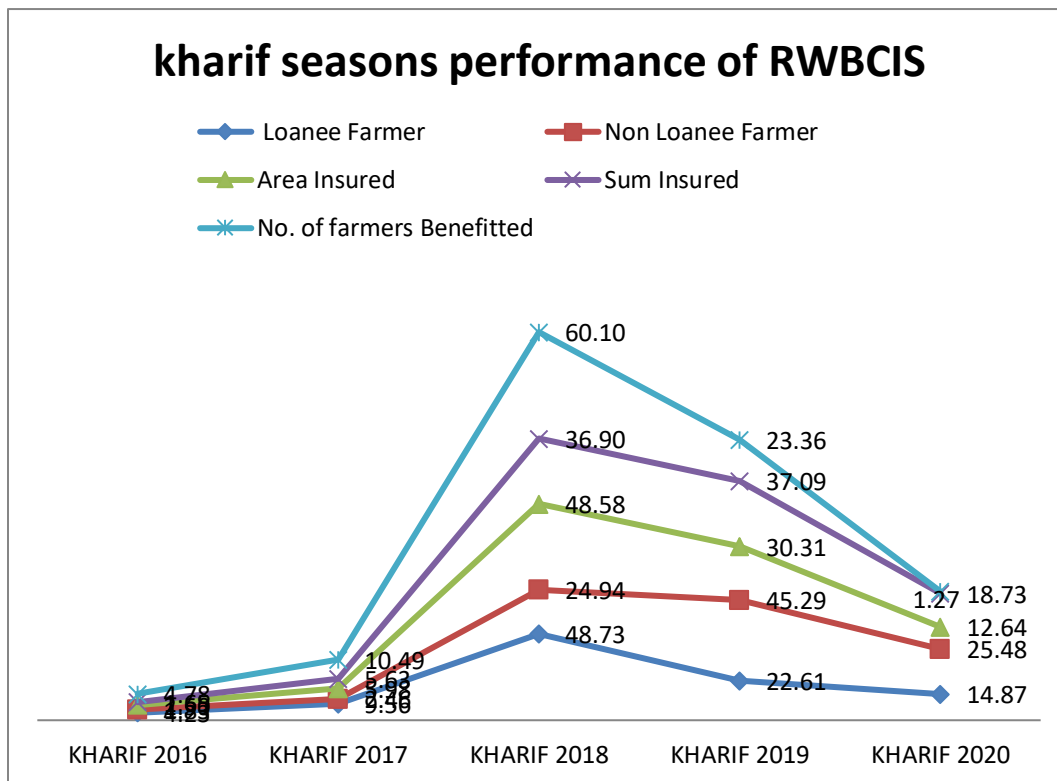


(Graph 2)

Table 3. Performance of Restructure Weather Based Crop Insurance Scheme Kharif Seasons from 2016-2020

season	Loanee Farmer	Non Loanee Farmer	Area Insured	Sum Insured	No. of farmers Benefitted
Kharif 2016	4.23	1.83	2.50	1.65	4.78
Kharif 2017	9.56	2.46	5.98	5.63	10.49
Kharif 2018	48.73	24.94	48.58	36.90	60.10
Kharif 2019	22.61	45.29	30.31	37.09	23.36
Kharif 2020	14.87	25.48	12.64	18.73	1.27

(Source:- www.aicofindia.com)



(Graph 3)

table 3 and graph 3 show the performance of restructuring weather-based crop insurance scheme for the season Kharif 2016 to Kharif 2020 in terms of the total number of applications by loanee farmers, the total number of applications by non-loanee farmers, area insured in a hectare, the total amount of sum insured and total number of farmers benefited. Firstly, the performance is measured in terms of the total number of loanee farmers applications and found that season 2018 (48.73) has the highest applications among all seasons followed by 2019 (22.61), 2020 (14.87), 2017 (9.56) and 2016 (4.23). In terms of the non-loanee farmers applications, the season has the highest in 2019 (45.29) followed by 2020 (25.48), 2018 (24.94), 2017 (2.46), and 2016 (1.83). In terms of being insured has the highest in 2018 (48.57) followed by 2019 (30.31), 2020 (12.64), 2017 (5.98), and 2016 (2.50). In terms of sum insured season has the highest in 2019 (37.09) followed by 2018 (36.90), 2020 (18.73), 2017 (5.63), and 2016 (1.65). at last, the performance is measured in terms of the total number of farmers benefited seasons wise and found that 2018 (60.10) is leading followed by 2019 (23.36), 2017 (10.49) 2016 (4.78), and 2020 (1.27).

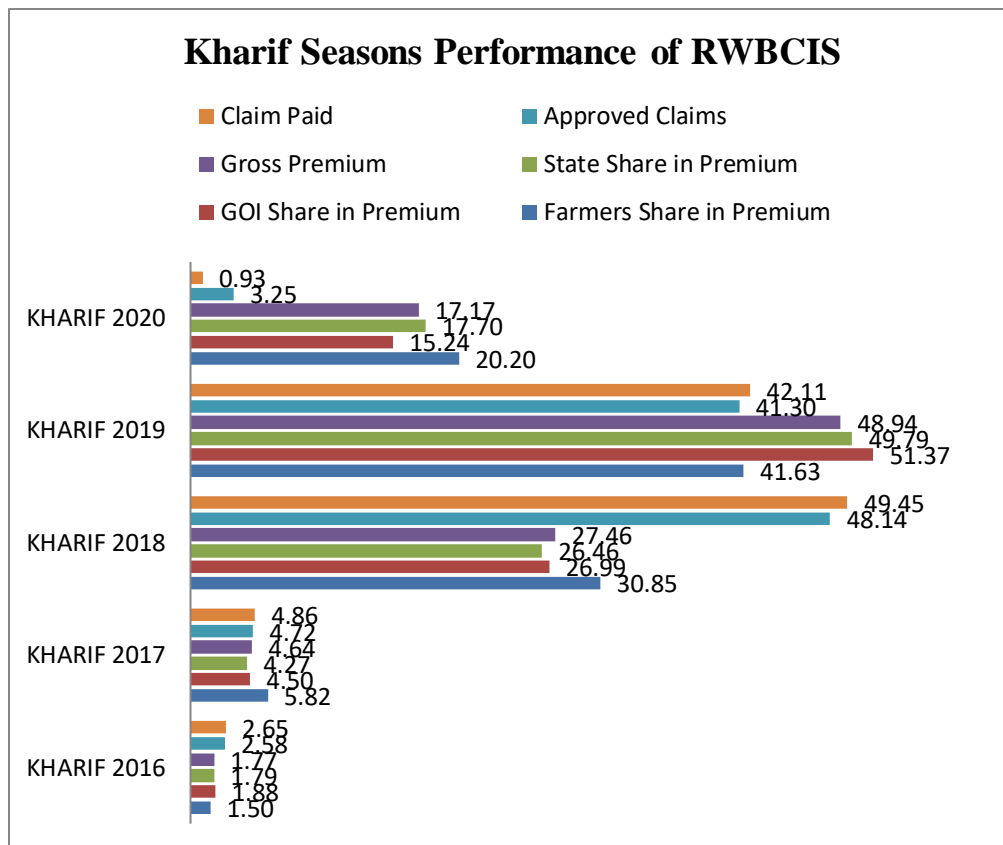
Table 4. Performance of Restructure Weather Based Crop Insurance Scheme Kharif Seasons from 2016-2020

Seasons	Farmers Share in Premium	GOI Share in Premium	State Share in Premium	Gross Premium	Approved Claims	Claim Paid
Kharif 2016	1.50	1.88	1.79	1.77	2.58	2.65
Kharif 2017	5.82	4.50	4.27	4.64	4.72	4.86
Kharif 2018	30.85	26.99	26.46	27.46	48.14	49.45
Kharif 2019	41.63	51.37	49.79	48.94	41.30	42.11
Kharif 2020	20.20	15.24	17.70	17.17	3.25	0.93

(Source:- www.aicofindia.com)

Table 4 and Graph 4 show the performance of RWBCIS in terms of the farmers share in premium, the government of India shares in premium, state government shares in premium, gross premium approved claim and claim paid to farmers for the season Kharif 2016- 2020. In terms of

farmers share in premium has the highest in season 2019 (41.63) followed by 2018 (30.85), 2020 (20.20), 2017 (5.82), and 2016 (1.50). In respect of the government of India share in premium has the highest in season 2019 (51.37) followed by 2018 (26.99), 2020 (15.24), 2017 (4.50), and 2016 (1.88). In terms of states government shares in premium has the highest in season 2019 (49.79) followed by 2018 (26.46), 2020 (17.70), 2017 (4.27), and 2016 (1.79). Another element of this scheme performance is gross premium and found that season 2019 (48.94) is leading among the all seasons followed by 2018 (27.46), 2020 (17.17), 2017 (4.64), and 2016 (1.77). In terms of the claim approved has the highest in the season 2018 (48.14) followed by 2019 (41.30), 2017 (4.72), 2020 (3.25), and 2016 (2.58). At last, the performance is measured in terms of the claim paid to the farmers a found that season 2018 (49.45) is the leading among all seasons followed by 2019 (42.11), 2017 (4.86), 2016 (2.65), and 2020 (0.93). From the findings, we can conclude that the performance is better in season 2019 and 2018 and poor in 2016 and 2017 and terms of the claim approved and claim paid to farmer's season 2020 has the poor performance.

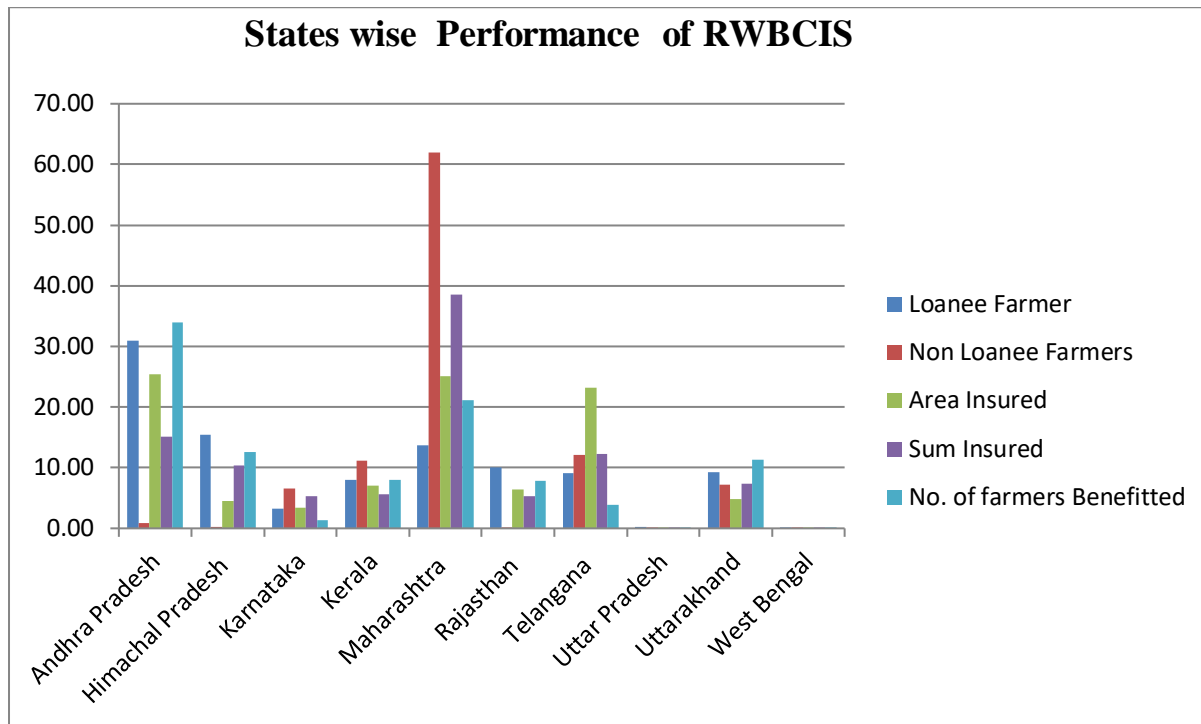


(Graph 4)

Table 5. States wise Performance of Restructure Weather Based Crop Insurance Scheme from 2016-2020

States	Loanee Farmer	Non Loanee Farmers	Area Insured	Sum Insured	No. of farmers Benefitted
Andhra Pradesh	30.98	0.81	25.36	15.13	33.89
Himachal Pradesh	15.43	0.21	4.44	10.35	12.61
Karnataka	3.28	6.51	3.42	5.38	1.30
Kerala	7.92	11.13	7.09	5.63	7.92
Maharashtra	13.61	61.96	25.11	38.52	21.13
Rajasthan	10.10	0.00	6.41	5.30	7.85
Telangana	9.11	12.12	23.26	12.19	3.89
Uttar Pradesh	0.24	0.01	0.10	0.16	0.02
Uttarakhand	9.28	7.23	4.80	7.32	11.39
West Bengal	0.05	0.02	0.01	0.03	0.00

(Source:- www.aicofindia.com)



(Graph 5)

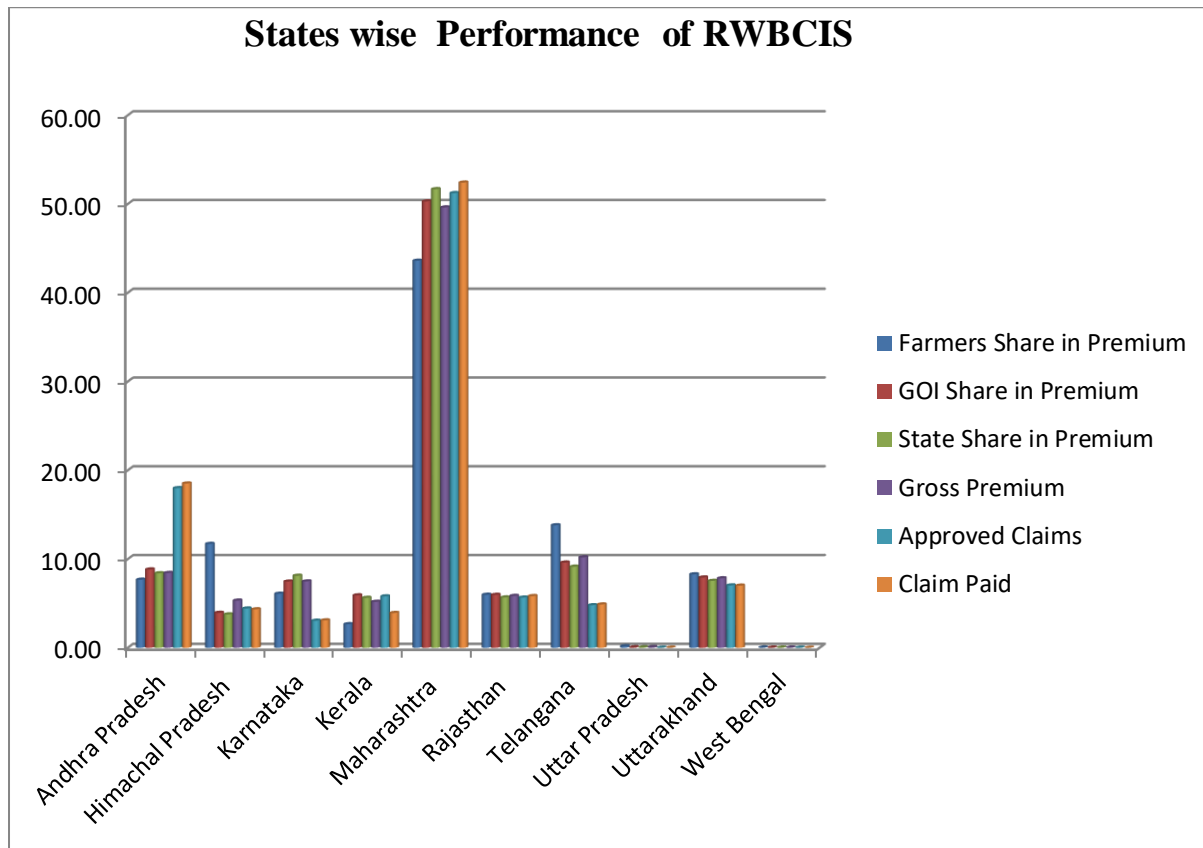
Table 5 and Graph 5 show the performance of RWBCIS in respect of loanee farmer’s applications, non-loanee farmers applications, total area insured, the total sum insured and the total number of farmers benefitted. Firstly, the performance is measured in terms of the total number of loanee farmers applications and found that Andhra Pradesh (30.98) has the highest followed by Himachal Pradesh (15.43), Maharashtra (13.61), Rajasthan (10.10), Uttarakhand (9.28), Telangana (9.11), Kerala (7.92) and Karnataka (3.28). Secondly, the performance is measured in terms of the total number of non-loanee farmers and found that Maharashtra (61.96) is the leading state followed by Telangana (12.12), Kerala (11.13) Uttarakhand (7.23), Karnataka (6.51), and Andhra Pradesh, Himachal Pradesh, Rajasthan, Uttar Pradesh, and West Bengal have the less than 1 percent of the total number of non-loanee farmers under this scheme from its implementation. Thirdly, the performance is measured in terms of total area insured under this scheme and found that Andhra Pradesh (25.36) has the highest share followed by Maharashtra (25.11), Telangana (23.26), Kerala (7.09), Rajasthan (6.41), Uttarakhand (4.80), Himachal Pradesh (4.44) and Karnataka (3.42). Fourthly, the performance is measured in terms of the total amount of sum insured and found that Maharashtra (38.52) has the highest followed by Andhra Pradesh (15.13), Telangana (12.19), Himachal Pradesh (10.35), Uttarakhand (7.32), Kerala

(5.63), Karnataka (5.38), and Rajasthan (5.30). At last, the performance is measured in respect of the total number of farmers benefited and found that Andhra Pradesh (33.89) is leading among all the states under this scheme followed by Maharashtra (21.13), Himachal Pradesh (12.61), Uttarakhand (11.39), Kerala (7.92), Rajasthan (7.85), Telangana (3.89) and Karnataka (1.30). The table shows that Uttar Pradesh and West Bengal have less than 1 percent share in all the elements of the scheme so we can say the performance is poor in both states.

Table 6 States wise Performance of Restructure Weather Based Crop Insurance Scheme from 2016-2020

States	Farmers Share in Premium	GOI Share in Premium	State Share in Premium	Gross Premium	Approved Claims	Claim Paid
Andhra Pradesh	7.67	8.83	8.40	8.43	17.99	18.51
Himachal Pradesh	11.71	3.94	3.76	5.32	4.43	4.34
Karnataka	6.09	7.46	8.12	7.48	3.05	3.09
Kerala	2.66	5.91	5.63	5.18	5.79	3.92
Maharashtra	43.61	50.29	51.67	49.62	51.23	52.41
Rajasthan	5.98	5.97	5.68	5.85	5.66	5.82
Telangana	13.80	9.60	9.14	10.19	4.79	4.88
Uttar Pradesh	0.18	0.06	0.05	0.08	0.01	0.01
Uttarakhand	8.28	7.92	7.54	7.83	7.03	7.00
West Bengal	0.03	0.02	0.02	0.02	0.02	0.00

(Source:- www.aicofindia.com)



(Graph 6)

table 6 and graph 6 show the states wise performance of RWBCIS in terms of farmer's share in premium, the government of India share in premium, state government shares in premium, gross premium approved claim, and claim paid to farmers for the season 2016- 2020. In terms of the farmer's share in premium has the highest in Maharashtra (43.61) followed by the Telangana (13.80), Himachal Pradesh (11.71), Uttarakhand (8.28), Andhra Pradesh (7.67), Karnataka (6.09), and Rajasthan (5.98) and Kerala (2.66). In terms of the government of India share in premium has the highest in Maharashtra (50.29) followed by the Telangana (9.60), Andhra Pradesh (8.83), Uttarakhand (7.92), Karnataka (7.46), Rajasthan (5.97), and Kerala (5.91) and Himachal Pradesh (3.94). In terms of states government share in premium has the highest in Maharashtra (51.67) followed by Telangana (9.14), Andhra Pradesh (8.40), Karnataka (8.12), Uttarakhand (7.54), Rajasthan (5.68), Kerala (5.63), and Himachal Pradesh (3.76). In terms of gross premium has the highest in Maharashtra (49.62) followed by Telangana (10.19), Andhra Pradesh (8.43), Uttarakhand (7.83), Karnataka (7.48), Rajasthan (5.85), and Kerala (5.18), and

Himachal Pradesh (5.32). Furthermore, the performance is measured in terms of the claim approved and found that Maharashtra (51.23) is the leading state followed by Andhra Pradesh (17.99), Uttarakhand (7.03), Kerala (5.79), Rajasthan (5.66), Telangana (4.79), Himachal Pradesh (4.43) and Karnataka (3.05). In terms of the claim paid Maharashtra (52.41) has the highest in among all the states followed by Andhra Pradesh (18.51), Uttarakhand (7.00), Rajasthan (5.82), Telangana (4.88), Himachal Pradesh (4.34), Kerala (3.92) and Karnataka (3.09). The performance is very poor in states Uttar Pradesh and West Bengal because they have less than a 1 percent share in all the elements of the scheme.

Results

The present study evaluated the performance of restructured weather-based crop insurance season-wise and as well as state-wise the study found there is fluctuation in performance year by year in the total number of loanee farmers covered, the total number of non-loanee farmers covered, total area insured in a hectare, the total amount of sum insured, share in premium of GOI, farmers and states government respectively, amount of claim approved, claim paid and the total number of farmers benefited under this scheme against claim payment from Rabi season 2016 to Kharif season 2020 and the only total number of 10 states are covered in this program and among of them Uttar Pradesh and West Bengal are getting less than 1 % benefited from this scheme in terms of farmers covered, in terms of area insured, in terms of premium, in terms of the claim approved and as well as claim payment and the total number of farmers benefited from the implementation to Kharif season 2020. Talking about season-wise performance, the performance was less in the beginning season but as the scheme is going on, the performance is getting better. The claim amount has pending against the approved claim and the total numbers of farmers are nil after Kharif season 2020. After that, it can be concluded that the objectives that were kept in mind at the time of implementation have not been successful in completing them.

Conclusion

Agriculture insurance in India has protected millions of farmers against agriculture disasters across regions, seasons, and crops. There are various issues are found to relating the weather crop insurance such as financial instability, effective operation, and efficient governance. The present study can reveal that weather agriculture insurance program has massive potential, huge efforts are required in the administration to make certain deep penetration. With the experience of restructuring weather-based crop insurance in India can be concluded that it has the potential to work because it has covered only weather losses not protecting from all risks. And huge

dissimilarities in performance seasons wise as well as states wise. It could be used for improving farmers' standard of living and their income after removing the limitations of this program.

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