



# Farmers Perceptions towards Agricultural Insurance Schemes in Southern Rajasthan: The Case of National Agricultural Insurance Scheme (NAIS) and Weather Base Crop Insurance Scheme (WBCIS)

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## Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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## ABSTRACT

Crop insurance is an insurance prearrangement aiming at mitigate the financial losses suffered by the farmers due to damage of their crops due to various production risks beyond their control like natural fire, weather, floods, pests, diseases etc. Government of India started offering crop

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insurance in 1985, with the Comprehensive Crop Insurance Scheme. This encourages farmers to carry on with their productive efforts, which not only improves the welfare of the farmers but finally helps in stabilizing the agricultural output. In total majority of respondents, the insured loanee farmers 88 (88/150) (58.70 per cent) stated favourable attitude, while 35 (35/150) (23.30 per cent) could be found under less favourable category. The 27 (27/150) (18.00 per cent) farmers reported under highly favourable proportion. Statement wise attitude of insured loanee farmers in five-point continuum recorded most favourable attitude with mean per cent score 81.52, 78.17, 77.49 and 71.50 and placed at 1st, 2nd, 3rd and 4th respectively. This stated that the farmers can sustain natural calamities and compensation is available in time.

**Keywords:** Crop insurance; attitude level; insured loanee farmers; NAIS; WBCIS; farm incomes; crop yields.

## 1. INTRODUCTION

Agriculture production and farm incomes in India are regularly affected by natural calamities such as droughts, floods, cyclones, storms, landslides and earthquakes. India's 16 per cent area is drought prone and 50 million people are annually affected by droughts [1]. In India about 49.81 million hectares (15.2 per cent) is flood prone and 10-12 million hectares is actually affected every year due to flood as per National Disaster Management Authority. Among total sown area of India, nearly 60 per cent is dependent on rainfall, hence natural calamities such as drought and flood may affect the overall economy of the country. The financial impact of these stresses on Indian agriculture is a deterioration in crop yields as well as production which in turn creates severe reduction in farmers income and this is beyond farmers' control. Contract farming and future trading mechanisms are another possible option for risk transfer, have their own limitations. Considering all these instruments, agricultural insurance is still considered as an important mechanism to tackle the physical risk both in case of income and output. The agricultural insurance significantly impacts farmers' income increases [2,8]. Agricultural Insurance is a way of protecting the farmer against financial losses due to uncertainties beyond their control. Unfortunately, agricultural insurance in country has not made much progress even though the need to protect Indian farmers from agriculture variability has been a growing concern for agricultural policy [9].

The agricultural sector in India has bestowed top priority since independence. The growth of Indian agriculture in the last five decades indicates that agricultural production has reached to new heights, especially after the Green Revolution. The food grain production of India, which was merely 51 million tons (Mt) in 1950-51 increased

over 6 times to over 314 Mt in 2022 [3]. India has attendant self-sufficiency, but still dominated by nature, it means the instability still haunts agricultural sector and seriously threatens the Indian farmers ability to step up the agricultural output and their capability. Government of India started crop insurance in 1985, with the Comprehensive Crop Insurance Scheme. The Comprehensive Crop Insurance Scheme was in operation till Rabi 1999 and then National Agricultural Insurance Scheme was introduced from Rabi 1999-2000. Agricultural Insurance Company of India Ltd was incorporated in December, 2002 and started operating from April, 2003 and implementation of NAIS started. This scheme was available for loanees and non-loanee farmers. It covers food grains and annual horticultural/commercial crops for which past yield data are available. Weather based crop insurance scheme (WBCIS) was introduced in Rabi 2007-08 with aims to mitigate adversities of insured farmers against probability of financial loss on account of anticipated crop loss resulting from adverse conditions of weather parameters like deficit or excess rainfall and other parameters like temperature, frost, humidity and wind, etc. As per the field officers, farmers and other stakeholders, there is need of evaluation and comparison between NAIS and WBCIS, to determine the strengths and weakness of the schemes [4,10]. The comparison may lead to further strengthening the existing scheme or to evolve any new crop insurance scheme.

## 2. METHODOLOGY

The investigation was conducted in the Salumber and Vallabh Nagar tehsils of Udaipur district of Rajasthan during 2013 & 2014. Udaipur district is between 28.3° N latitude and 75° E longitude and elevation of 579.5 meters above mean sea level. Udaipur district was divided into eleven Panchayat samities. The Salumber and

Vallabhnagar tehsils were selected based on the highest insured loanee farmers (ILFs) under crop insurance schemes. The NAIS and WBCIS had been operated in around 200 villages of Salumber and Vallabhnagar tehsils. 10 villages (5 each from Salumber and Vallabhnagar), within the radius of 10 kms from tehsil headquarters of Salumber and Vallabhnagar were included for investigation. The first five villages from each tehsil were selected with higher number of insured loanee farmers (ILFs). The number of respondents were 300. 150 (75 each from Salumber and 75 Vallabhnagar tehsils) insured loanee farmers were selected from selected villages. To achieve the desired sample size, proportionate random sampling procedure was followed to identify real insured loanee farmers under both the schemes. pre-survey was conducted prior to drawing samples from every village for preparing the list of insured beneficiaries and who have drawn loan under crop insurance through NAIS and WBCIS. The investigation is the comparative study of NAIS and WBCIS of both the tehsils. National Agriculture Insurance Scheme is no longer in operation and Weather Based Crop Insurance Scheme is still in operation. Therefore, the study was carried out for combining 'Ex-post-Facto Research design (for NAIS scheme) and process evaluation study design (for WBCIS scheme). The respondents regarding their attitude level were classified into three categories viz., less favourable (23.64 to 48.79), moderately favourable (48.79 to 73.94) and highly favourable (73.94 to 99.09). The statement wise attitude of insured loanee farmers was also measured on a five-point continuum [5,7,11,12].

### 3. RESULTS AND DISCUSSION

**Attitude level of the insured loanee farmers towards the NAIS and WBCIS:** Comparative examination shows that about more than one half of the ILFs 88 (88/150) (58.70 per cent) expressed favourable attitude, while 35 (35/150) (23.30 per cent) could be sited under less favourable category. The proportion of the farmers reported in the highly favourable category was 27 (27/150) (18.00 per cent). Thus, it can be concluded that the majority of ILFs had a moderate to highly favourable attitude towards both the schemes for cultivation of wheat. This might be due to farmers being satisfied with both the insurance schemes. The farmers of Salumber tehsil were found to be highly and more favourable toward NAIS and WBCIS schemes. The results were in conformity with the

findings of Sawant et al. [6]. It is recommended that the insured loanee farmers of Vallabhnagar should be persuaded more for their inclination toward crop insurance. It may be possible through counselling and convincing strategy followed by government agriculture department. Field functionaries of the insurance schemes were also responsible for the same.

#### **Item wise attitude level of the insured loanee farmers towards NAIS and WBCIS schemes:**

The statement wise attitude level of the insured loanee farmers was measured on a five-point continuum. It is apparent that the most important statements viz., "Hardly I can sustain safely during flood, high/low temperature and humidity", "I get compensation in time", "I can go for any Agricultural operations with the help of crop insurance" and "Claim is adequate" showed most favourable attitude owed to mean per cent score 81.52, 78.17, 77.49 and 71.50 and placed at 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>, respectively. The statements which reflected good degree of attitude were "I can sustain safely in drought years due to Crop insurance", "Given adequate loan" and "ease in getting claims" with mean per cent scores 71.17, 64.27 and 63.84 were ranked 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> respectively. Table 2 further shows the moderate attitude towards the statements like "Lesser improvement in relation to agricultural credit", "I can sustain in case of poor production", "Adequate compensation", "Premium is bearable", "Premium of Crop insurance is high", "I get claim in case of crop is damaged", "Sufficient agriculture companies under crop insurance scheme" and "Increment in productivity" with their scoring 63.37, 63.24, 63.01, 60.11, 58.10, 56.47, 56.07 and 55.82 which were placed at 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, 14<sup>th</sup>, and 15<sup>th</sup> rank, respectively. The respondents expressed slightly favourable attitude level toward statements viz. "prevention from financial disasters due to crop failure", "my economic condition does not improve due to C.I.", "threshold / Guaranteed yield is low", "economic instability", "many crops are covered under crop insurance scheme", "decisions about compensation are defective" and "easy formalities in the banks" with mean per cent scores 55.42, 55.35, 52.43, 51.33, 50.46, 49.01 and 47.79. It can be concluded that the ILFs of Salumber and Vallabhnagar tehsils had most favourable attitude towards the insurance schemes, stating that, farmers can sustain during natural calamities, compensation is available in time, they can go for any operation with crop insurance, claims under the insurance schemes

**Table 1. Respondents attitude Level of the insured loanee farmers towards the NAIS and WBCIS n=150**

Sl.No	Adoption level	Tehsil		Total
		Vallabhnagar	Salumber	
1	Less favourable (23.64 - 48.79)	27 (77.14) 36.00*	8 (22.86) 10.67*	35 (23.30)
2	Moderately favourable (48.79-73.94)	39 (44.32) 52.00*	49 (55.68) 65.33*	88 (58.70)
3	Highly favourable (73.94 - 99.09)	9 (33.33) 12.00*	18 (66.67) 24.00*	27 (18.00)
Total		75 (100)	75 (100)	150 (100)

n= Total number of respondents, \*= Percentage to columns, Figures in the parentheses show percentage of rows

**Table 2. Item wise attitude level of insured loanee farmers towards NAIS and WBCIS schemes n=150**

S. No	Aspect	Tehsil				Total	
		Vallabhnagar		Salumber		MPS	Rank
		MPS	Rank	MPS	Rank		
1	I can go for any Agricultural operations with the help of crop insurance	65.52	6	89.45	1	77.49	3
2	My economic condition does improve due to C.I.	59.21	8	51.56	19	55.35	17
3	I can sustain safely in drought years due to C.I.	54.33	14	88.00	2	71.17	5
4	I can sustain safely during flood, high/low temperature and humidity	79.00	2	84.04	3	81.52	1
5	Adequate compensation	59.01	9	67.00	7	63.01	10
6	I can sustain in case of poor production	62.44	7	64.04	8	63.24	9
7	Premium is bearable	58.89	10	61.33	10	60.11	11
8	Decisions about compensation appropriate.	49.01	18	49.00	20	49.01	21
9	I get compensation in time	77.67	3	78.67	4	78.17	2
10	Premium of C.I. is optimum	48.21	19	67.99	6	58.10	12
11	Claim is adequate	81.00	1	62.00	9	71.50	4
12	Given adequate loan	56.09	13	72.45	5	64.27	6
13	Many crops are covered under crop insurance scheme	52.56	16	48.36	21	50.46	20
14	adequate agriculture companies under crop insurance scheme	51.97	17	60.12	11	56.07	14
15	Easy formalities in the banks	47.64	21	47.94	22	47.79	22
16	Threshold / Guaranteed yield is high	45.19	22	59.67	12	52.43	18
17	Ease in getting claims	68.01	5	59.66	13	63.84	7
18	I get claim in case of crop is damaged	56.72	12	56.21	15	56.47	13
19	Prevention from financial disasters due to crop failure	53.83	15	57.00	14	55.42	16
20	More improvement in relation to agricultural credit	74.73	4	52.00	18	63.37	8
21	Increment in productivity	57.67	11	53.97	17	55.82	15
22	Economic stability	47.55	20	55.11	16	51.33	19

→ rs = 0.93\*\* ←

MPS = Mean per cent score  
 \*\* = Significant at 1 per cent level

is adequate and they can sustain during droughts. The findings are also supported by the results of Sawant et al., [6], which revealed that 85.82 per cent respondents had favourable attitude, followed by 18.36 per cent having unfavorable and 15.32 per cent having most

favorable attitude towards agricultural courses. Based on the results, it is recommended that threshold guaranteed period should be increased, the formalities of insurance schemes should be made easy, economic stability under the schemes be ensured, premium must be

made optimum and compensation procedure must be made proper.

#### 4. CONCLUSION

The farmers should be convinced more for their inclination toward crop insurance. It can be possible by counselling and convincing. Also, the formalities of the crop insurance schemes with the farmers should be minimized, economic stability under the schemes should be ensured, premium should be made optimum, compensation procedure must be easy and the threshold guaranteed period should be increased.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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