

# **A Study of Farmers Knowledge on Crop Insurance Schemes in Northern Karnataka**

## **ABSTRACT**

The study was conducted Karnataka State during 2017-18 by using “Ex-post- facto” research design. Belgavi, Dharwad, Haveri and Vijayapura districts were selected purposefully based on more number of insured farmers. Further, two taluks from each district and from each taluk three villages (i.e. total 24 villages) were selected randomly. Sample size for the study was 240. Purposive random sampling procedure was used. The findings of the study revealed that, 44.17 per cent of the insured farmers belonged to low knowledge level followed by medium (37.92%) and high (17.91%) knowledge level with respect to Crop Insurance Schemes. The variable ‘credit availed’ had positive and significant relationship at one per cent level of probability. Whereas, education, land holding, annual income, extension contact and mass media exposure exhibited positively significant relationship at five per cent level of probability with knowledge level insured farmers. The co-efficient of determination ( $R^2$ ) was 0.427 which revealed that 42.70 per cent of the variation in the knowledge level of insured farmers was together explained by all the independent variables. The variables such as, education, land holding, annual income and credit availed contributed significantly towards knowledge level of insured farmers.

**Key words:** Knowledge, Crop Insurance Scheme, Claim, Crop Cutting Experiments and Samrakshane portal.

### **1. Introduction**

Agriculture production and farm income in India are frequently affected by natural disasters such as droughts, floods, cyclones, storms, landslides and earthquakes. Susceptibility of agriculture to these disasters is compounded by the outbreak of epidemics and man-made disasters such as fire, sale of spurious seeds, fertilizers and pesticides, price fluctuations etc. All these events severely affect farmers through loss in production and farm income, and they are beyond the control of the farmers. With the growing commercialization of agriculture, the magnitude of loss due to unfavourable eventualities is increasing. The question is how to protect farmers by minimizing such losses. For a section of farming community, the minimum support prices for certain crops provide a measure of income stability.

32 In recent times, mechanisms like contract farming and future's trading have been  
33 established which are expected to provide some insurance against price fluctuations directly  
34 or indirectly. But, agricultural insurance is considered as an important mechanism to  
35 effectively address the risk to output and income resulting from various natural and manmade  
36 events. Agricultural Insurance is a means of protecting the agriculturist against financial  
37 losses due to uncertainties that may arise agricultural losses arising from named or all  
38 unforeseen perils beyond their control. Unfortunately, agricultural insurance in the country  
39 has not made much headway even though the need to protect Indian farmers from agriculture  
40 variability has been a continuing concern of agriculture policy. According to the National  
41 Agriculture Policy, "Despite technological and economic advancements, the condition of  
42 farmers continues to be unstable due to natural calamities and price fluctuations". In some  
43 extreme cases, these unfavourable events become one of the factors leading to farmer's  
44 suicides which are now assuming serious proportions (Raju and Chand, 2008).

45 Agricultural insurance is one method by which farmers can stabilize farm income and  
46 investment and guard against disastrous effect of losses due to natural hazards or low market  
47 prices. Crop insurance not only stabilizes the farm income but also helps the farmers to  
48 initiate production activity after a bad agricultural year. It cushions the shock of crop losses  
49 by providing farmers with a minimum amount of protection. It spreads the crop losses over  
50 space and time and helps farmers make more investments in agriculture.

51 In India insurance in agriculture, historically, has roots in a study during 1947-48  
52 recommending homogenous area approach, crop insurance bill in 1965 and expert committee  
53 headed by Dharam Narian report denying crop insurance scheme in 1971. Later, Dandekar in  
54 1976 advocated crop insurance and pilot crop insurance scheme (PCIS) was implemented in  
55 1979 with the involvement of General Insurance Corporation (GIC) which covered 13 states  
56 and 6.27 Lakhs of farmers till 1984-85. During 1985 comprehensive crop insurance scheme  
57 (CCIS) was implemented and replaced by National Agricultural Insurance Scheme (NAIS) in  
58 1999 to include non- loanee farmers which continued till 2015-16. To remove the arguments  
59 on the merits and demerits of NAIS, a new scheme, Modified National Agricultural Insurance  
60 Scheme (MNAIS) based on actuarial premium rates expected to generate more benefits to  
61 farmers through coverage of prevented sowing/planting risk and post-harvest losses, higher  
62 indemnity level of minimum 70 per cent with more precise calculation of threshold yield was  
63 implemented during 2010.

64 To remove the inherent flaws, new scheme namely Pradhan Mantri Fasal Bima Yojna  
65 (PMFBY) has been launched during Kharif 2016 which let farmers pay a very low premium  
66 to insure their crops. Farmers have to pay a premium of only 2.00 per cent of the sum insured  
67 for Kharif crops, 1.50 per cent for Rabi crops and 5.00 per cent for horticulture and cash  
68 crops. The difference between the premium paid by the farmers and the premium fixed by the  
69 insurance companies will be subsidized and there will be no cap on the maximum subsidy  
70 paid by the Government. The subsidy has to be borne equally by central and the respective  
71 state Government. The coverage includes losses due to non-preventable risks (Natural Fire  
72 and Lightning, Storm, Hailstorm, Cyclone, Typhoon, Tempest, Hurricane, Tornado. Risks due  
73 to Flood, Inundation and Landslide, Drought, Dry spells, pests/ Diseases), having intent to  
74 sow/plant and incurred expenditure for the purpose, and are prevented from sowing/planting  
75 crop due to adverse weather conditions, post-harvest losses (up to a maximum period of 14  
76 days from harvesting) and certain localized problems (Anon, 2017). In the present study,  
77 Knowledge referred to the quantum of accurate information known to the insured farmers  
78 about Crop Insurance Schemes. The main focus of this investigation was to assess the  
79 knowledge level of farmers about Crop Insurance Schemes and to find out the relationship  
80 with socio-economic characteristics of farmers.

## 81 **Methodology**

82 The study was conducted Karnataka State during 2017-18 by using “Ex-post- facto”  
83 research design. Belgavi, Dharwad, Haveri and Vijayapura districts were selected  
84 purposefully based on more number of insured farmers. Further, two taluks from each  
85 district and from each taluk three villages (i.e. total 24 villages) were selected randomly.  
86 Sample size for the study was 240. Purposive random sampling procedure was used. “A  
87 teacher made test” as suggested by Anastasi (1961) was developed to measure the  
88 knowledge about Crop Insurance Scheme. By consulting the previous studies, discussion  
89 with experts and our own research experience, 25 questions for Crop Insurance Scheme  
90 were framed. The responses were given a score of one for correct answer and zero to  
91 wrong answer. The summation of scores of the correct answer for a particular respondent  
92 indicates his knowledge about Crop Insurance Schemes. The interview schedule was pre-  
93 tested in non-sample area for its practicability and relevancy. The data collected from  
94 respondents were tabulated and analyzed using appropriate statistical tools such as  
95 frequency, percentage mean, standard deviation, correlation and regression. The  
96 respondents in the knowledge level were grouped using frequency and percentage. Based

97 on the scores obtained, knowledge level of the respondents were categorized as low,  
98 medium and high by using mean and standard deviation.

### 99 **3. Results and Discussion**

#### 100 **Overall Knowledge level of insured Farmers towards Crop Insurance Scheme**

101 Overall knowledge level of insured farmers about Crop Insurance Scheme as depicted  
102 in in Table-1 revealed that, 44.17 per cent of the insured farmers belonged to low knowledge  
103 level followed by medium (37.92 %) and high (17.91%) level of knowledge about Crop  
104 Insurance Scheme. The probable reason might be that, lack of detailed information, less  
105 publicity of Crop Insurance Scheme and lower education level of farmers. Further, majority of  
106 the farmers had lower level of knowledge on crop insurance benefits such as; premium rates,  
107 premium subsidy, coverage of crops, compulsory nature, closing dates, registration can be  
108 changed, information on sum insured, insurance benefit for preventable risks, delay sowing,  
109 localized calamities, loss of standing crops, post harvest losses, Samrakshane portal of Govt.  
110 of Karnataka and Crop Cutting Experiments. The findings are in conformity with the findings  
111 of Surve *et al.*, (2005), Mohapatra *et al.*, (2016) and Jambuvant (2017)

#### 112 **Statement wise knowledge level of farmers about crop insurance scheme**

113 The results presented in Table 2 revealed that, majority of the insured farmers had higher  
114 knowledge with respect to the individual statements; *'Farmers get the insurance claim*  
115 *through direct account payment'* (100%) followed by *'Farmers can do the insurance for only*  
116 *state notified crops'* (95.00%), *'Insurance can be obtained from all banks such as commercial*  
117 *banks, Regional Rural Banks Primary Agricultural Credit Society etc'*. (71.25%), *'Claim of*  
118 *crop insurance can be made during the situations like drought, flood and localized*  
119 *calamities'* (70.41%) and *'Information about crop cutting experiments'* (67.92%), *'31st July*  
120 *is closing time for registering kharif season crops with respect to last year/season'*(65.70%),  
121 *'31st December is closing time for registering for rabi season crops with respect to last*  
122 *year/season'* (65.42%) and *'Crop Cutting Experiments are conducted at gram panchayat/*  
123 *hobli level with respect to both major crops and minor crops'* (64.58%).

124 The probable reasons for the above results may be that, as the agriculture is gambling with  
125 nature which has led to erratic rainfall, scanty rainfall, heavy rains in one area and no rains in  
126 other areas. These factors leading to less production, food scarcity, suicidal tendency among

127 the farmers. By considering these factors the Govt. of India has recently introduced the crop  
128 insurance scheme Pradhan Mantri Fasal Bima Yojana (PMFBY) with alterations in the  
129 previous schemes by increasing coverage of farmers including area, crops, sum insured and  
130 reduced premium rate. for the benefit of the farming community. The Govt. has also made  
131 compulsion to all the concerned developmental departments, banks, insurance agencies to  
132 make wide publicity about the benefits of crop insurance scheme among the farming  
133 community.

134 The other reasons might be, farmers discuss with their neighbor farmers and relatives  
135 regarding claim status and also regularly check their passbook status, they get to know about  
136 claim. Because of own experience from several years and interaction with bank officials they  
137 know that, the crop insurance can be availed for only state notified crops, crop insurance  
138 availability in all three types of banks and closing dates. Majority of the farmers had  
139 knowledge that claim of crop insurance can be made during situations like drought, flood and  
140 localized calamities. Since, farmers have basic knowledge that crop insurance is claimed in  
141 unexpected conditions/ natural calamities and the scheme is meant for the same. However, the  
142 farmers had received the claim in above mentioned situations before.

143 In most of the farmers' field and neighbors' field the insurance / Agricultural Officers  
144 have already conducted the crop cutting experiments on both major and minor crops. During  
145 that time farmers realized the usefulness of crop cutting experiments. More than half of the  
146 respondents do not know that crop insurance scheme is compulsory for loanee farmers,  
147 because while getting the crop loan the bank officers do not inform farmers that the premium  
148 rate will be deducted from their bank account. Nearly half of the farmers did not have the  
149 knowledge regarding share of subsidy premium by the State and Central Government under  
150 Crop Insurance Scheme as some of the farmers think that this scheme is provided only by the  
151 central government whereas, some other famers think that the scheme is provided by the state  
152 government.

153 Slightly more than one fourth of farmers had knowledge on crop insurance can be  
154 availed from both Pradhan Mantri Fasal Bima Yojana (PMFBY) and Weather Based Crop  
155 Insurance Scheme (WBCIS) schemes (29.58%) and Crop Cutting Experiments can only be  
156 conducted in the presence of insurance agent, bank officials and line department officials  
157 (25.83%). Some of the farmers are aware about each crop premium rate for a acre/ hectare but

158 they do not know the exact percentage premium rate for food, oil seed crops, commercial and  
159 annual horticultural crops. Practically in filed level only insurance officers conducted the crop  
160 cutting experiments but bank and line department officials did not participate, which resulted  
161 in farmers' lower knowledge on those who actually conduct the crop cutting experiment.

162 "Samrakshane" Portal for Crop Insurance Scheme is developed by Karnataka State  
163 Government was known by 23.33 per cent, whereas 21.67 per cent of them had knowledge  
164 about loanee and non-loanee farmers get same amount of sum insured and one fifth of  
165 farmers had knowledge about extent of sum insured amount for rainfed and irrigated crops is  
166 different the reason might be that, lack of detailed information, lower education level and less  
167 awareness about Crop Insurance schemes.

168 Further claim of crop insurance cannot be made during the situations like preventable  
169 risks, fire hazard and damage caused by wild animals was known by 19.16 per cent. Due to  
170 lack of detailed information on Crop Insurance Schemes, farmers believe that they will get  
171 claim in above mentioned situations also. Farmers do not know that the claim is not given for  
172 preventable risks. About seventeen per cent farmers had knowledge about twenty five per cent  
173 claim can be made out of the sum insured amount in all the situations of damages, because,  
174 from many years they are received claim in above mentioned situations.

175 Most of the farmers have notion that farmers those who own land can only avail the  
176 crop insurance scheme, another reason is that bank officers are also not allowing other  
177 farmers to avail the crop insurance. While discussing farmers expressed that if they allow  
178 tenant farmers for availing crop insurance in their name, over a period of time any changes  
179 made in the laws may lead the tenant farmers to own their lands. Hence, in fear of losing the  
180 lands, farmers only let the tenant farmers for cultivation and not to avail the crop insurance in  
181 their name.

182 Also a meager per cent of farmers had knowledge about the already registered crops  
183 for crop insurance can be changed (7.50 %), the coverage of insurance claim for post-harvest  
184 risk is up to 14 days (5.83 %) and Samrakshane" portal provides the information regarding  
185 notified crops, claims and insurance unit (4.58 %). Due to lack of detailed information on the  
186 crop insurance scheme more than ninety percent of the farmers were unaware about changing  
187 the crop after they insured. Even though few farmers were aware of this facility due to the  
188 tedious procedure to get insurance for another crop they do not show interest as well. The

189 farmers expressed that they do not know at all about restricted period to claim the post harvest  
190 risks. But they have only heard the post harvest risk claims can be availed. Only negligible  
191 number of farmers knew that the information regarding notified crops, claim and insurance  
192 unit can be get by using Samrakshane portal. This might be due to lack of detailed  
193 information, publicity on the crop insurance scheme and lower education level of farmers.  
194 The findings were in agreement with the research findings of Gebrehiwot (2015) and Kumar  
195 *et al.* (2017).

196

### 197 **Relationship between independent variables with knowledge level of crop insured** 198 **farmers**

199 The results presented in Table 3 revealed that, the variable ‘credit availed’ had  
200 positive and significant relationship at one per cent level of probability. The possible reason  
201 might be that, farmers with higher financial capability increases their ability to meet their  
202 transaction costs associated with the various innovative technologies that they would like to  
203 take. Naturally farmers while borrowing credit from financial institutions, would like to have  
204 more knowledge about Crop Insurance Scheme. The findings are in conformity with the  
205 findings of Nagabhushana (2007), Kharumnuid (2011), Kumar *et al.* (2011) and Krantikumari  
206 (2014).

207 Whereas, education, land holding, annual income, extension contact and mass media  
208 exposure exhibited positively significant relationship at five per cent level of probability with  
209 knowledge level insured farmers. The possible reasons are higher the formal education, higher  
210 will be the knowledge level of farmers. Generally farmers having larger size of land holding  
211 will have more income and higher socio-economic status. They are in the habit of exploring  
212 every possible source to have more knowledge so as to get more income. The farmers who  
213 frequently contacted the extension personnel of developmental departments might have  
214 exposed to various kinds of information and might have gained more knowledge on Crop  
215 Insurance Scheme. Mass media exposure enhances the ability of farmers to get more  
216 information about Crop Insurance Scheme and in turn widens the mental horizon of the  
217 farmers to accept and adopt the Crop Insurance Scheme. Annual income provides  
218 accessibility to farmers to acquire more formal education and more exposure to new things.

219 The results are in line with findings of David *et al.* (2014), Singh *et al.* (2014) and Gwandu *et*  
220 *al.* (2015).

### 221 **Multiple regression analysis of independent variables with respect to knowledge level of** 222 **insured farmers**

223 The data presented in Table 4 revealed that, the independent variables together  
224 exerted significant influence on the knowledge level of insured farmers. This is evidenced by  
225 co-efficient of determination ( $R^2$ ) indicated 42.00 per cent of variation in knowledge level  
226 due to the combined effect of all the independent variables. The results also pointed out that,  
227 four independent variables namely, education, land holding, annual income and credit availed  
228 contributed significant influence on knowledge level of insured farmers. It could be implied  
229 from the significant regression coefficient values of these variables that, one unit increase in  
230 annual income caused increase in the knowledge level of insured farmers by 2.78 units. Land  
231 holding caused increase by 2.18 units, education caused increase by 2.87 units and credit  
232 availed caused increase by 3.12 units in knowledge level. Hence, all these variables prove as  
233 good predictors of knowledge level of insured farmers.

### 235 **3 Conclusion**

236 In the present study farmers knowledge was found to be low. Thus, concerned  
237 officers, policy makers, administrators and the agencies involved in crop insurance scheme  
238 implementation should conduct awareness programmes from time to time by using different  
239 extension teaching methods like trainings, workshops, distribution of pamphlets, road shows,  
240 advertisement through television, newspaper, radio, mobile SMS. Insured farmers to be  
241 informed before deducting the premium by the concerned officials by providing policy  
242 document in local language. Loss assessment procedure should be made flexible and hassle  
243 free. The sum insured under crop insurance scheme should not be less than scale of finance or  
244 cost of cultivation. Non-loanee farmers also to be encouraged by simplifying the online  
245 registration process and making the 'Samrakshane Portal' farmer friendly. Farmers should be  
246 well informed on or before conducting the Crop Cutting Experiment and concerned officials  
247 should be involved. Crop loss assessment to be made at Panchayat level by covering all crops  
248 instead of Hobli level. The insurance company should have permanent office at hobli / taluk



249 level for effective planning, monitoring and handling of grievances with respect to claim  
250 settlement. Claim to be dispersed every year before starting of the next season.

251

252

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295  
 296 **Table 1 : Overall farmers knowledge on Crop Insurance Schemes**  
 297

**n=240**

Sl. No.	Category	Frequency	Percentage
1	Low (<14.30)	106	44.17
2	Medium (14.31 to 17.87)	91	37.92
3	High (>17.87)	43	17.91
Mean = 16.08 SD = 4.20			

298 Table 2. Statement wise farmers knowledge on Crop Insurance Schemes

299

Sl. No.	Knowledge Statements	n=240	
		f	%
1.	Farmers owning land, tenants and share croppers all are eligible for crop insurance	27	11.25
2.	Insurance can be obtained from Commercial banks, Regional Rural banks and Primary Agricultural Credit Society	171	71.25
3.	Premium rate prescribed for notified food and oil seed crops for Kharif season crops is 2 %	81	33.75
4.	Premium rate prescribed for notified food and oil seed crops for Rabi season crops is 1.5 %	65	27.08
5.	Premium rate prescribed for Commercial / annual horticultural crops is 5%	68	28.33
6.	Crop Insurance Scheme is compulsory for loanee farmers	115	47.92
7.	31st July is the closing date of registration for Crop Insurance Scheme during Kharif season	162	67.50
8.	31st December is the closing date of registration for Crop Insurance Scheme during Rabi season	157	65.42
9.	Insured crop can be changed after registration	18	7.50
10.	Extent of Sum Insured remains same for loanee and non-loanee farmers	62	25.83
11.	Twenty five per cent claim can be made out of the Sum Insured amount in case of prevented sowing, localized calamity, loss of standing crop and post harvest losses.	42	17.50
12.	Share of subsidy Premium by the State and Central Govt under Crop Insurance Scheme is 50:50	114	47.50
13.	Ongoing crop insurance schemes are Pradhan Mantri Fasal Bima Yojana and Weather Based Crop Insurance Scheme	71	29.58
14.	Claim of crop insurance can be made during the situations like drought, flood and localized calamities	169	70.41
15.	Claim of crop insurance can not be made during the situations like preventable risks, fire hazard and damage caused by wild animals	46	19.16
16.	Extent of Sum Insured amount for rainfed and irrigated crops will be different	48	20.00
17.	Farmers can do the insurance for only state notified crops	228	95.00
18.	“Samrakshane” portal is related to crop insurance scheme	56	23.33
19.	Farmers can check their insurance claim status through “Samrakshane” Portal by feeding details of Mobile Number, Aadhar Number, Panni Number	34	14.16
20.	In Samrakshane” Portal Farmers can get the information regarding notified crops, claim and insurance unit	11	4.58
21.	Crop Cutting Experiments are related to crop insurance scheme	163	67.92
22.	Crop Cutting Experiments are conducted in the presence of insurance agent, bank officials and line department officials	62	25.83
23.	Crop Cutting Experiments are conducted at Gram Panchayat/ Hobli level with respect to both major crops, minor crops	155	64.58
24.	The coverage of insurance claim for Post harvest risk up to 14 days	14	5.83
25.	Farmers get the insurance claim through direct account payment	240	100.0

300 f = Frequency % = Percentage

301 **Table 3 Correlation coefficients of independent variables with farmers knowledge on Crop**  
 302 **Insurance Schemes**  
 303

Sl. No.	Independent variable	Correlation coefficients
1.	Age	0.046 NS
2.	Education	0.198*
3.	Land Holding	0.218*
4.	Farming Experience	0.092 NS
5.	Annual Income	0.207*
6.	Training Recieved	0.022 NS
7.	Extension Contact	0.246*
8.	Scientific Orientation	0.120 NS
9.	Mass Media Exposure	0.233*
10.	Risk Orientation	0.119 NS
11.	Organisational Participation	0.138 NS
12.	Credit availed	0.308**
13.	Extent of climate variation	0.084 NS
14.	Cropping pattern	0.020 NS

304 \*\* . Correlation is significant at the 0.01 level (2-tailed).

305 \* . Correlation is significant at the 0.05 level (2-tailed).

306  
 307  
 308 **Table 4 Multiple regression analysis of the independent variables with farmers knowledge on**  
 309 **Crop Insurance Schemes**  
 310

Sl. No.	Independent variable	Regression coefficients (b)	S.E.	't' value
1.	Age	0.02	0.03	0.73 NS
2.	Education	0.39	0.12	2.87*
3.	Land Holding	0.01	0.03	2.18*
4.	Farming Experience	0.07	0.08	0.83 NS
5.	Annual Income	0.00	0.00	2.78**
6.	Training Orientation	0.36	0.30	1.18 NS
7.	Extension Contact	0.05	0.10	0.53 NS
8.	Scientific Orientation	0.08	0.12	0.67 NS
9.	Mass media	0.30	0.17	1.78 NS
10.	Risk Orientation	0.05	0.11	0.44 NS
11.	Organisational Participation	0.28	0.11	1.46 NS
12.	Credit availed	0.05	0.19	3.12**
13.	Extent of climate variation	0.06	0.45	1.12 NS
14.	Cropping pattern	0.18	0.15	0.87 NS

311 Coefficient of determination ( $R^2$ ) = 0.427

312 F value = 1.57\*

313

\* : significant at 0.05 level

\*\* : significant at 0.01 level

NS: Non-significant