

# **A Study on Farmers' Awareness, Perception and Willing To Join and Pay for Crop Insurance**

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**ABSTRACT:** *This paper discusses the findings of the study in the area of crop insurance. Firstly it measures the awareness level and source of awareness, secondly examines the farmers' perception, finally identify the farmers willingness in paying for crop insurance. The study was conducted in Kunichampet village, Puducherry District, India and 140 convenient respondents were chosen and been carried out in June and July, 2012. From the analysis farmers awareness level about crop insurance was low. Most of the farmers were not willing to pay for crop insurance because of instable income, premium rate, no or low compensation, problems with distribution channel and lack of financial knowledge.*

**Key words:** *Crop Insurance, awareness, perception, willing to pay.*

## **I. INTRODUCTION**

Agriculture is an important economic activity for the people in Pondicherry region about 45% of the total population depends directly or indirectly on it. The soil and climatic conditions of Pondicherry district allows multiple cropping pattern and high cropping intensity, but paddy is being the predominant crop. Agriculture in Pondicherry region is shrinking in terms of arable land and crop net production due to increasing demand for land from other economic sectors, insufficient labour, frequently affected by natural calamities, and the increasing cost of agricultural inputs such as seeds, fertilizers, pesticide and low market price.

It is here that crop insurance plays a vital role in anchoring a stable growth of agricultural sector. Crop insurance is an insurance arrangement aiming at mitigating the financial losses suffered by the farmers due to damage and destruction of their crops as a result of various production risks (A.I.C of India). In this view of this, the need for protecting farmers from the various risks and hazards was recognized by the government and introduce National Agricultural Insurance scheme in Pondicherry region.

The crop insurance scheme is delivered as compulsory along with crop loan from the financial institutions like primary agricultural banks, regional rural banks and commercial banks and voluntary basis for non crop loaners. But there is need to study how farmers perceive crop insurance, are they fully aware about it and whether the non crop loaners are willing to join and pay for crop insurance schemes. The present study examines the farmers' perception, secondly measures the awareness level and source of awareness, finally identify the farmers willingness in paying for crop insurance in Pondicherry district.

## **II. REVIEW OF EXISTING LITERATURE**

Insurance is a contract made for financial arrangement between two parties when few suffered losses are met from the funds accumulated through small contributions made by many who are exposed to similar risks.

### **2.1 Crop insurance**

Crop insurance has been one of the most reliable and longest running programs for stabilization and risk management for farmers in many countries. This has been particularly true in parts of North America, where crop insurance became more common and commercially available around 1960. Multi-peril crop insurance, the most popular type of crop insurance, usually insures farmers against yield losses from natural causes such as weather (e.g. drought, excessive moisture, wind, snow, and frost), insects, and disease. A properly designed and implemented crop insurance programme will protect the numerous vulnerable small and marginal farmers from hardship, bring in stability in the farm incomes and increase the farm production (Bhende 2002).

The farmer is likely to allocate resources in profit maximizing way if he is sure that he will be compensated when his income is catastrophically low for reasons beyond his control. A farmer may grow more profitable crops even though they are risky. Similarly, farmer may adopt improved but uncertain technology when he is assured of compensation in case of failure (Hazell 1992). This will increase value added from

agriculture, and income of the farm family. Bhende (2005) found that income of the farm households from semi-arid tropics engaged predominantly in rain-fed farming was positively associated with the level of risk. Hence, the availability of formal instrument for diffusion of risk like crop insurance will facilitate farmers to adopt risky but remunerative technology and farm activities, resulting in increased income.

It is observed that insured households invest more on agricultural inputs leading to higher output and income per unit of land. Interestingly, percentage increase in output and income is more for small farms. Based on 1991 data, CCIS was found to contribute 23, 15, and 29 per cent increase in income of insured farmers in Gujarat, Orissa and Tamil Nadu, respectively (Mishra 1996)

## **2.2 Promoting crop insurance**

Boyd and others (2011) collected data from a survey questionnaire given to farmers in Inner Mongolia, China, in 2007. It includes two county areas, with the first area covering the Dalate region, and the second area covering the Wushen region. The survey includes 220 farmers, and main groups of variables used for this study include knowledge and behavioral information, risk level, and crop insurance premium level, main information sources for crop insurance, role of farmer in the village, and Off-farm income. They conclude that these variables are found to influence purchase of insurance according to the explanatory model developed using probit regression.

Suresh Kumar and others (2011) conducted a study in Tamil Nadu by interviewing 600 farmers spread over 27 out of 32 districts of the state. For maximizing information base, those farmers were selected in the sample, who were covered under the on-going Cost of Cultivation for Principal Crops scheme of the Government of India. The sampled farmers were from the categories of marginal to large farms cultivating all important crops in one or two seasons under various agro-ecological situations, such as tank irrigation, groundwater irrigation, canal irrigation and rain fed farming. Data were collected during January – March, 2009.

The Probit and Tobit models were employed to study awareness about crop insurance schemes and premium paid for crop insurance. The study revealed that social participation and Education level enhance awareness about innovative products in crop insurance. It has been found that the factors given under influence significantly and positively the adoption of insurance: gross cropped area, income other than agricultural sources, presence of risk in the farming, number of workers in the farm family, satisfaction with the premium rate and affordability of the insurance premium amount. The study brought out the need for appropriate stakeholders interface and capability building initiatives to enhance adoption of crop insurance scheme and its reach to the target group.

Narayanan and Saravanan (2011) conducted a study in and around Erode rural namely Arachalur, Bhavani, Nanjai Uthukuli, Nasiyanur and Vellore. They collected data from 120 farmers chosen by convenient sampling method. The researcher collected data by employing a questionnaire and analyzed it using percentages, ANOVA and Chi Squares. It was found that only 35.3% of the respondents have insured for both cattle and crop. About 82.4% of the respondents have been motivated by other farmers and. 29.4% of the respondents have felt that TV media is more effective media to know about agriculture insurance. About 30.8 % of the respondents are not willing to go for the insurance. Customer care service will affect the respondents' period of using insurance service. There is a close significant relationship between period of insuring and level of satisfaction towards services provided by the insurer.

Kong (2011) based on survey of 890 farm households in Shaanxi and Gansu provinces examined the willingness to pay for weather insurance using linear regression. The authors find strong evidence that the demand for drought insurance is downward sloping and fairly elastic. It was found in case of live stock and crop insurance there is greater willingness to pay.

## **III. OBJECTIVES OF THE STUDY**

1. To assess the farmers perception and awareness towards crop insurance scheme.
2. To identify the non insured farmers willingness in join and pay for crop insurance.
3. To provide suggestions to improve awareness and farmers willingness in joining and paying for crop insurance program.

## **IV. HYPOTHESIS**

Ho: There is no significant relationship with education level of farmers and willing to join and pay for crop insurance program.

## **V. RESEARCH METHODOLOGY**

The data has been collected from the farmers of Kunichampet village, Pondicherry district, U.T. of Pondicherry by administering the self structured questionnaire to them. The samples consist of marginal, small and large farmers. 140 convenient respondents were chosen by the following criteria. The village consists of

nearly 300-400 households. The average households have been 350. Normally 35 to 45% of households in villages belong to farming community. From 350 households 40% of farm households i.e. 140 were chose as sample size in this study. The study has been carried in June and July, 2012. The analysis of data collected has been carried out using percentage analysis and the hypotheses were tested using chi-square test.

## VI. RESULTS AND FINDINGS

### Profile of the sample farmers

The significant proportion (58.5) of sample farmers were above the age of 45 and the remaining were below 45 years of age. Maximum respondents 67% had their school education, 16% of respondents had their college education and 17% of respondents were illiterate. In the study area the farmers has less participation in any groups. Nearly 66% of farmers were not in any NGOs or SHGs. Only 34 % of respondents were member in SHGs called ATHMA. Majority of respondents 86% in study owns their own land. As far as income concerned a major percentage 68% of respondents have their annual income from their farm was below 2 lakhs. This implies the respondents were mostly small and marginal level farmers. The following table shows in detail about the profile of the respondents.

**Table 1 shows the profile of the sample farmers**

Variable	Categories						F	%
Age (years)	Between 25-45						58	41.5
	Above 45						82	58.5
Education	Illiterate						24	17
	School education						94	67
	College education						22	16
Membership	None						92	66
	SHGs (Athma group)						48	34
	NGOs						0	0
	Others						0	0
Income (amount)	<b>Farming</b>							
	Below 1,00,000	1-2 lakhs	2-3	3-4	4-5	Above 5		
<b>F</b>	80	16	4	14	16	10		
<b>%</b>	57.1	11.4	3	10	11.4	7.1		
	<b>Non-farming</b>							
	Below 1,00,000	1-2 lakhs	2-3	3-4	4-5	Above 5		
<b>F</b>	36	0	2	0	2	0		
<b>%</b>	21.4	0	1.4		1.4	0		
<b>Farm Land Holding Possession type</b>						<b>F</b>	<b>%</b>	
<b>Own</b>						120	86	
<b>Leased</b>						8	6	
<b>Both owned and leased</b>						12	8	

### Reasons for crop losses

The farmers were asked about major risks which affects their crop production. In the study area natural calamities like cyclone, storm and variation in rainfall is the major reason 75% for crop losses. Crop diseases place 13% and non availability of agricultural inputs places 14% in crop production losses.

**Table 2 shows the reason for crop loss in study area**

S.No	Reasons	F	%
1	Cyclones, drought, floods, fire and other disasters	76	54.2
2	Variation of rainfall	30	21.4
3	Crop diseases	18	13
4	Poor fertility of land		
4	Non availability of inputs (seeds, fertilizers and pesticides)	16	11.4
5	Irrigation problems	0	0
6	Power problems	0	0
7	Spurious seeds	0	0
8	Others	0	0

### **Risk Management**

Traditional and informal risk managing mechanisms like borrowings from friends, neighbors and relatives and through jewel loan was the major risk management strategy used by farmers in study area to mitigate crop production risks, followed by bank loan. Crop insurance plays a minor work as risk management instruments in study area.

**Table 3 shows Risk Coping Mechanism**

S.No	Mechanism	F	%
1	Sale of fixed asserts	2	1.4
2	Savings	30	21.4
3	bank loan	46	32.8
4	borrowings from neighbors or friends	58	41.4
4	government subsidiary	2	1.4
5	agriculture insurance	4	2.8
6	Others ( jewel loan)	24	17

### **Awareness and Source of Awareness**

The crop insurance is not a new concept to farmers but its reach and subscription of it was low in study area. From this study 40% of respondents were both aware and subscribed crop insurance and 27% aware but not subscribed and remaining respondents were not aware about crop insurance schemes. The farmers subscribed crop insurance along with crop credit loan. Bank acts as a nodal agency in delivering crop insurance and being the main source of providing information on crop insurance to farmers.

**Table 4 shows the Awareness and Source of Awareness**

S.No	Source	F	%	
1.	Awareness	Not aware	46	33
2.		Aware and subscribed	56	40
3.		Aware but not subscribed	38	27
4.	Source of information	Fellow farmers	26	27.5
5.		Banks / financial institution	62	66
6.		News paper/ TV/ radio	6	6.5
7.		Agri dept. officials	0	0
8.		NGOs or any other agency	0	0

**Perception of farmers towards crop insurance scheme**

The farmers who were aware about crop insurance were asked their perception about crop insurance. Most of the respondents felt that crop insurance was made only for large farm size farmers or high income farmers. Only few farmers 19% felt that it suits for all farmers. Because of high premium rate and low compensation paid small and marginal farmers felt that crop insurance is not suits for them. 62 % of respondents perceive that current form of crop insurance does not a risk management instrument by sharing financial losses. 61.8 % of respondents show their negative sign towards risk sharing of crop insurance and few farmers agrees that crop insurance bare the 0-50% of risks.

**Table 5 shows the Perception of Farmers towards Crop Insurance Program**

Particulars	F	%	
Only for Large farmers	49	52.2	
Only for small farmers	8	8.5	
Only for marginal farmers	5	5.3	
For all farmers	18	19.2	
For none	0	0	
Cant say	14	14.8	
Extent of sharing of risk by crop insurance	None	58	61.8
	0-50%	18	19.1
	51-100%	3	3.1
	Cant say	15	16

**Willing to join and pay for crop insurance schemes for non-policy holders.**

The non policy holders 60% of crop insurance was enquired about their willingness in join and pay for crop insurance. By explaining the need for crop insurance in crop production 37% of respondents were ready to buy crop insurance and few respondents were ready to buy if certain conditions were provided. This was explained in the below tables.

**Table 6 shows the willingness to join and pay for crop insurance**

Particulars	F	%
Ready to buy	31	37
Not ready to buy	19	23
No response	7	8
Still need some time	27	32
<b>Conditions</b>	F	%
Reduction in premium rate or Subsidiary increase from 50% to 75%	36	68
Compensation time within 3-6months	45	85
Full compensation for loss amount	45	85
Full information given by nodal agency	12	23
Insurance unit size will be small to individual farms	38	72

**The proposed hypothesis was tested with Chi-square test**

The chi square analysis was made to find out the relationship between educational level of farmers and their willingness in joining and pay for crop insurance.

**Table 7 shows the result of chi-square analysis**

O	E	(O-E)	(O-E) <sup>2</sup> /E
24	33.9	-9.9	2.891
116	106	10	0.943
31	21	10	4.761
56	65.9	-9.9	1.487
		<b>Total</b>	<b>10.082</b>

**Chi square**  $(X^2) = \sum (O-E)^2 / E = 10.082$

**The degrees of freedom** = (c-1) (r-1) = (2-1) (2-1) = 1

The tabular value of X<sup>2</sup> (degrees of freedom = 1) is 3.841 and the value of X<sup>2</sup> that from calculation is 10.082. Hence the tabulated value is less than the calculated value, so the Ho is rejected and concluded that there is relationship between education level of farmers and willingness in join and pay for crop insurance.

**Suggestions**

The product design and choosing appropriate distribution channel are key functions to make crop insurance more effective reach among the farmers.

**Educating farmer**

The crop insurance was delivered along with crop credit loan through banks. The bank officials are not the right persons to make full awareness, explain advantages and disadvantages of crop insurance to farmers. Simply they work for their small commission so the service providers have to play their role in educating farmers about their product. Suresh kumar 2011 points out that social participation of farmers will increase crop insurance awareness. In study area the social participation was less, so that the government of puducherry through local agricultural department and primary agricultural credit society to form same crop cultivators association or farmers association. The grouping of farmers in some form of group will increase their financial knowledge.

The service provider should be actively engaged in public awareness and capacity building campaign for farmers through bank personnel, Agricultural department and village administrative offices. Even though

these types of campaign produce low results, but it helps the farmers to insight the advantages and disadvantages of crop insurance to make its reach effective.

### **Improving farmers willingness in join and pay for crop insurance**

From then study findings farmers perceive that crop insurance suits only for farmers with large farm size and high income. So the service providers has to look on to new product which offer effective focus on financing economic losses in affordable premium to small and marginal farmers. The service providers follow area approach in loss assessment in which farmers perceive it to change as individual basis.

The farmers were sensitive to premium rate and returns in time. The service providers have to concentrate on both. The company should provide compensation in time. For that the loss assessment was major factor which delays the claim in time. A person will be appointed by the service provider for every district may take over this function so that loss assessment carried out in every district at the same time and it shortens the returns in time. It will greatly help the farmers to recover from bad agricultural years. This will influence other non subscriber to subscribe crop insurance.

### **Implications**

The study furnishes information on major crop production risks and their traditional managing mechanism, farmers perception, their awareness level and willingness in joining crop insurance schemes and helps identify gaps in marketing offer and innovative crop appropriate schemes.

### **Scope for further research**

The application area- crop insurance requires more fields based micro studies to enhance understanding of the issues in a more contextual way. There are issues like product innovation for meeting crop insurance needs, distribution innovations to have wider and easy distribution.

## **VII. CONCLUSION**

From the study findings it is cleared that the natural disasters like cyclone, storm and variation in rainfall are the major risks in the study area. In the theoretical frame work crop insurance stabilizes the farmer's income during the losses in crop production. But in real picture it doesn't act as risk management instrument during the loss in farming. The farmers perceive that the crop insurance is mainly suits for large farm size farmers and its extent in risk sharing was very low. They also considered that the premium rate is not affordable by small and marginal farmers. Bank officials place a major role in making awareness among farmers but they are not suits to explain the real terms and condition of crop insurance among farmers. So the service providers have to look on the product innovations and appropriate distribution channel to make crop insurance reach more effectively.

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