

# Perception and Awareness Level of Farmers on Crop Insurance in Odisha: A Case Study of Selected Villages of Champua Block in Keonjhar District

## Abstract

Millions of rural poor depend on agriculture to earn their livelihoods. It is the agriculture which is considered as the backbone of our Indian economy. Indian agriculture depends on monsoon and prone to a variety of risks. Crop insurance plays a pivotal role to save farmers against the risks associated with agriculture. Both the state government and central government have implemented different crop insurance schemes for the benefits of farmers. The aim of this study is to assess the awareness level of farmers and their willingness to pay for crop insurance. Ten villages of Champua Block in Keonjhar District have been selected for this study. All of these villages are equally sound in cultivating both Kharif and Rabi crops. Farmers have been randomly selected from each of the villages under study through the use of random sampling method. A total number of 110 farmers have been selected for personal interviews with the help of a structured questionnaire. Chi square test has been used to study the association between the level of awareness of farmers about crop insurance and their educational background. The study finds that there is no association between the educational background of farmers and their awareness level about crop insurance. Evidence from the study indicates that majority of farmers are not aware about crop insurance. The study reveals that government should give more premium subsidy to encourage large number of farmers to participate in the crop insurance. The study further recommends for the periodic awareness campaign and education of farmers to improve their knowledge on crop insurance. The study concludes with the suggestion that there is a strong need to review and refine the existing crop insurance schemes to ensure better penetration of crop insurance in Odisha.

**Keywords:** Agriculture, Crop Insurance, Farmer, Awareness, Perception

## Introduction

India is an agrarian economy with one third populations depending on the agriculture sector directly or indirectly. It has 116 million farm holdings covering an area of 163 million hectares of which small and marginal farmers (with holdings of 2 hectares or less) make up 80 percent of the producer population. Farming is an inherently risky business and farmers face different types of risks. Near about 60 per cent of the total sown area of the country is rain-fed and 65 percent of Indian farmers depend on rain-fed irrigation. The growth of crops and realization of output are determined by the quantum of rainfall and its distribution during the rainy season. Rainfall pattern also affects the irrigated crops. Nearly two third of the cropped acreage in India is vulnerable to drought in different degrees. This leads to operating risk in cultivation of different crops. On an average 12 million hectares of crop area is affected annually by these calamities severely impacting the yields and total agricultural production.

Agricultural production and farm incomes 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 crashes, etc. All these events severely affect farmers through loss in production and farm income, and are beyond the control of farmers. With

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growing commercialization of agriculture, the magnitude of loss due to unfavourable eventualities is increasing. In recent times, mechanisms like contract farming and futures trading have been established which are expected to provide some insurance against price fluctuations directly or indirectly. But, crop insurance is considered as an important mechanism to address the risks effectively.

India is one of the largest exporters of various food grains, crops and farm products. The farmers of India play a very vital role in the development of economy but they are still living in the curse of poverty and deprivation. Agriculture production and farm incomes in India are frequently affected by weather and climatic conditions like droughts, floods, cyclone, frost, storms, landslides, etc. Outbreak of epidemics, fire, and market fluctuations are the other factors which seriously affect production and farm income. All these events are beyond the control of the farmers. With the growing commercialization of agriculture, the magnitude of shock due to unfavourable eventualities is increasing and the need to protect farmers against production and income losses is becoming stronger. Agricultural insurance is considered an important mechanism to effectively address the risk to output and income resulting from various natural and manmade events. Agriculture Insurance plays an important role in sharing the risks of people in an affordable form. It helps the farmers to quickly recover from damages and losses. Crop insurance has assumed importance with large scale of damage caused due to pest attacks, crop diseases and vagaries of weather. The objective is to provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests & diseases. The list of crops being covered for insurance differs from state to state. These crops are insured at the block/gram panchayat levels. Crop insurance schemes are of immense help to farmers, providing them with financial security. Low productivity, less income and high loans taken for agriculture are forcing the farmers of India to commit suicide. They are living in a very stressful life even after giving others a comfortable life by fulfilling their most wanted need in the form of farm products.

### **Relevance of the Study**

Agriculture in India is varied, diversified and prone to a variety of risks. Most of the farmers are small and marginal ones. In most areas, agriculture is rain fed, leading to a greater degree of yield variability and risk. Agriculture is considered to be the backbone of the Indian economy. Nearly two-thirds of its population depends directly on agriculture. Agriculture provides direct employment to 70 percent of working people in the country. Agricultural development is a precondition of our national prosperity. It is the main source of earning livelihood of the people. Government has launched several schemes like National Agricultural Scheme and Weather Index Based crop insurance schemes for protecting the farmers against risks in agriculture. Due to the risk of loss in agriculture the farmers are making suicide

attempts, selling their properties or the properties are seized by the Bank and financial institutions for the loan availed by the farmers. This is due to lack of awareness about the risk management techniques among the farmers. So, it is very important to study about various aspects of agriculture and crop insurance.

### **Review of Literature**

Many research works have been done in different areas of crop insurance in India and especially about the perception of farmers on it. A good number of literatures are available on the various aspects of crop insurance in India. A few of these reviews are as follows.

**S.S. Raju and Ramesh Chand (2008)** in their research article, "A Study on the Performance of National Agricultural Insurance Scheme and Suggestions to make it more Effective", they have examined the features and performance of National Agricultural Insurance Scheme (NAIS) operating in the country and has suggested some modifications to make it more effective. Every suggested improvement has financial implications and affects the concerned insurance practices. It requires renewed efforts by the government in terms of designing appropriate mechanisms and providing financial support to agricultural insurance. Providing of similar support to the private sector insurers would help in increasing the insurance coverage and improving the viability of insurance schemes over time. The study has also suggested that different general insurance companies in the country may be assigned some reasonable targets to cover agricultural insurance, and to begin with, it could be equal to the share of agriculture in the national income.

**D. Suresh Kumar, B.C. Barah, C.R. Ranganathan, R. Venkatram, S. Gurnathan and S. Thirumoorthy (2011)** in their research work, "An Analysis of Farmers' Perception and Awareness towards Crop Insurance as a Tool for Risk Management in Tamil Nadu", they have reported the results of a survey of 600 farmers conducted to assess their perception about various facets of crop insurance schemes. The survey has revealed that most farmers (65%) are aware of risk mitigation measures of the government. But, only half of the farmers have been found aware about the crop insurance schemes/products. This implies that there is need to disseminate information about insurance schemes across the target groups. Further, it has been shown that factors such as gross cropped area, income from other than agricultural sources, presence of risk in farming, number of workers in the farm family, satisfaction with the premium rate and affordability of the insurance premium amount significantly and positively influence the adoption of insurance and premium paid by the farmers. The study has clearly brought out the urgency of developing more innovative products, having minimum human interventions.

**S.B. Goudappa, B. S. Reddy and S.M. Chandrashekhar (2012)** in their research work, "Farmers Perception and Awareness about Crop

Insurance in Karnataka”, they have made a study on the farmers perception and awareness of crop insurance was conducted in North Eastern parts of Karnataka because region receives very less rainfall compared to other part of Karnataka and people of this region always suffering from drought, they continue to suffer. The study revealed that average size of family among borrowers and non borrowers was seven. Most of them (44%) are illiterate and 25% were education up to primary level. Level of education, family size and experience in farming did not show any significant difference between among the district selected for study. Respondent farmers were suggested for improving existing scheme and they want quick settlement of claims which is usually taking more than one year. Around three fourth of the beneficiaries suggested to consider adverse weather condition prevailed during flowering and pod formation stage. National Agriculture Insurance Scheme (NAIS) in operation needs to be continued with modification and simplification of modalities of indemnity, loss assessment, settlement of compensation and disbursement procedure.

**Kiyanoush Ghalav and, Karim. MH (Karim Koshteh) and Abolhassan Hashemi (2012)** in their research study, “Agriculture Insurance as a Risk Management Strategy in Climate Change Scenario: A study in Islamic Republic of Iran”, they made a study to develop a realistic framework and concrete roadmap for introducing crop insurance as a risk management strategy for the farmers in Iran. The study is based on both secondary and primary data and information. Survey was the research method, and data was collected by questionnaire and different instruments, such as survey questionnaire, FGDs, interview schedule, inception workshop and roundtable discussions with stakeholders at different levels. The three survey districts were: Golestan Province (as a flashflood area, north of Iran), Khuzestan Province (as a drought area, south of Iran) and Khuzestan Province (as a cyclone and flood-prone area, south of the country). The results revealed that four independent variables explain adoption of Drought insurance. Consult with other farmers is the main independent variable.

**J.Sundar and Lalitha Ramakrishnan (2013)** in their paper, “A Study on Farmers’ Awareness, Perception and Willing to Join and Pay for Crop Insurance”, they have discussed 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.

**Dr.B.Ravi Kumar (2013)** in his research paper, “Crop Insurance – Tribulations and Prospects of Farmers with reference to Nuzvid, Krishna District” he discusses the outcomes 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 Nuzvid, Krishna District, Andhra Pradesh and 140 convenient respondents were chosen and been carried out in June and July, 2013. 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.

**Lopamudra Mohapatra & R K Dhaliwal (2014)** in their research article, “Review of Agricultural Insurance in Punjab State of India”, they have looked into the genesis of agricultural insurance in India macroscopically and examines various agricultural schemes operating in the state of Punjab microscopically. The design for the study was descriptive research. The focus of the review was on the functional agricultural insurance schemes in Punjab state microscopically and macroscopically in the country. The agriculture insurance can act as a motivation for the farmers of Punjab to go for diversification by setting themselves free from the risks involved and the loss in income which they shall face. Crop insurance needs to be strongly taken up at the policy level; with well defined risk to Punjab’s agriculture, well devised products for these risks in current scenario.

**Phillip Daniel Daninga and Zhang Qiao (2014)** in their article, “Factors Affecting Attitude of Farmers towards Drought Insurance in Tanzania”, they assessed farmers’ attitude towards drought insurance in Bunda district. The sample of the conducted cross sectional survey consisted of 410 respondents. A five point likert scale has been generated and included in the questionnaires. Analysis has been done using Factor analysis and reliability tested by Cronbach’s alpha. Factors that affected farmers’ attitudes towards drought insurance are compensation fairness of drought insurance, convenience of service delivery of drought insurance, program appropriateness, and government’s protection to farmers. Farmers’ attitudes toward the program were negative. Farmers’ attitudes and perception should be incorporated in developing effective drought insurance in Tanzania.

**Dr. Md. Mushfiqur Rahman, Bikash Chandra Ghosh and Dr. Mir Khaled Iqbal Chowdhury (2014)** in their research work, “Problems and Prospects of Weather Index Based Crop Insurance in Developing Countries: A Case for Rural Farmers in Bangladesh”, the authors have tried to address the problems and challenges in implementing this insurance product in low income countries. The main objective of this paper is to theoretically assess weather-index based crop insurance as an instrument to graduate poor farmers out of poverty trap. Data have been collected from literatures of different

sources such as journals, working papers, World Bank and other development organizations' websites and research publications those are relevant to the study. Proper preparation for index measurement, premium determination, flexible product design, wider stakeholder involvement, public private partnership, and a 'big push' from government and donors through seed financing can promote weather index based crop insurance in Bangladesh.

### Research Gap

A good number of studies have been done in different areas of crop insurance. After an intense review of related literature it was found that a few numbers of studies have been made to study the level of awareness of farmers on crop insurance in India and especially in the backward state of Odisha where most of the people depend on agriculture to eke out their livings. Crop insurance is one of the most important tools to handle risk which needs further study to make it more meaningful. Therefore, it is an attempt made by the researcher to fill the existing gap by conducting this study.

### Objectives of the Study

The main purpose of this paper is to study the awareness level of farmers about crop insurance in Odisha. However, the specific objectives of the study are as follows.

1. To study the socio-economic profile of the farmers in the study areas.
2. To examine the perception and awareness level of farmers about crop insurance.

### Hypothesis

The null hypothesis of the present study is as follows.

1. There is no significant relationship between the level of awareness of farmers about crop insurance and their educational background.

### Research Methodology

The data has been collected from the farmers of different villages of Champua Block in Keonjhar District of Odisha. The villages under study are Jally, Bhandra, Padmapur, Sarei, Tuntuna, Jyotipur, Sarangi, Niundi, Tangarbantala, Nandapur, Rengalbeda, Rautrapur, etc. The sample consists of marginal, small and large farmers. On the basis of convenience sampling method 110 farmers have been selected for this present study. Normally 70 to 75% of households in different villages under this study area belong to farming community. A well structured questionnaire has been used to collect data from the respondents. The study has been carried out in the month of February, 2017. The present study is mainly based on the primary data. The analysis of data has been carried out by using percentage analysis and testing of hypothesis has been done by using chi square test

### Data Analysis And Interpretation

**Table 1.1**  
**Socio-economic Characteristics of Sample Farmers**

Socio-Economic Characteristics	Classification	No of farmers	Percentage (%)
Age in years	Up to 22	7	6
	23-30	13	12
	31-40	69	63
	Above 40	21	19
Marital Status	Single	9	8
	Married	101	92
Type of Family	Joint	97	88
	Nuclear	13	12
Number of Dependants	Nil	19	17
	1	31	28
	2-3	39	35
	More than 3	21	20
Family Background	Cultivation	79	72
	Daily labourer	18	16
	Private Job/Service	13	12
Educational Qualification	No formal education	57	52
	Primary	33	30
	Matric	11	10
	Degree/Diploma	9	8
Type of House	Hut	12	11
	Pucca	9	8
	Thatched House	89	81
Landholdings (in Acre)	Less than 1	7	6
	1-2	63	57
	3-4	27	25
	Above 4	13	12
Annual Income (in Rs.)	Less than 10,000	23	21
	10,000-20,000	67	61
	20,000-30,000	12	11
	Above 30,000	8	7
Savings (in Rs.)	Nil	49	45
	Less than 5,000	31	28
	5,000-10,000	19	17
	Above 10,000	11	10

**Source:** Author's calculation based on field survey

Table No.1.1 indicates that the majority (63%) of the farmers are between the age group of 31-40 years, most of them (92%) are married and (52%) of the farmers have no formal education. Family background of the farmers are cultivation (72%) followed by daily labourer (16%). Most of the farmers (81%) have Thatched house built of mud and straw. All most all the farmers belong to small and marginal category having land holdings of 1-2 acres. The above table also depicts that (61%) of the farmers have income in between Rs.10, 000-20,000 per annum. Most of the farmers (45%) consume what

they earn while (28%) save less than Rs.5000 per annum.

**Table No.1.2**  
**Farmers' awareness level about crop insurance schemes in the study areas**

Awareness level	Number of Farmers	Percentage
Aware	29	26
Not Aware	50	46
Indifferent/ No opinion	31	28
<b>Total</b>	<b>110</b>	<b>100</b>

**Source:** Author's calculation based on field survey

Table No.1.2 shows that the awareness level among the farmers about crop insurance schemes in the study areas is very low. Farmers are not aware about the crop insurance schemes implemented by the Government as risk management tool. Most of the farmers (46%) have no idea about crop insurance, (26%) of the farmers have some basic knowledge about crop insurance while (28%) have no opinion about this.

**Table No.1.3**  
**Number of Farmers opted for Crop Insurance**

Particulars	Number of Farmers	Percentage
Insured	19	26
Not Insured	54	74
<b>Total</b>	<b>73</b>	<b>100</b>

**Source:** Author's calculation based on field survey

Table No.1.3 depicts that only (26%) of the farmers have opted for crop insurance schemes. Rest of the farmers (74%) have not joined in the crop insurance schemes in spite of their awareness and knowledge about crop insurance.

**Table No.1.4**  
**Source of Information about Crop Insurance**

Source	Number of Farmers	Percentage
Newspaper/ Television	19	17
Friends/Relatives	23	21
Banks	59	54
Govt. Departments	9	8
<b>Total</b>	<b>110</b>	<b>100</b>

**Source:** Author's calculation based on field survey

Table No.1.4 depicts that (54%) of the farmers get information about crop insurance schemes from Banks, (17%) of the farmers from Newspaper and other electronic Media, (8%) of the farmers from the government departments and rest (21%) of the farmers from friends and relatives.

**Table No.1.5**  
**Nature of risks faced by farmers**

Risks	Number of Farmers	Percentage
Less Rain/Drought	59	54
Heavy Rain/Flood	17	15
Pests	34	31
<b>Total</b>	<b>110</b>	<b>100</b>

**Source:** Author's calculation based on field survey

Table No.1.5 depicts that (54%) of the farmers have the opinion that less rain is the main cause of risk, (31%) of the farmers have the opinion that pests bring risk while (15%) of the farmers believe that natural calamity like flood is also another case of risk.

**Table No.1.6**  
**Type of Crop Insured**

Type of Crop	Number of Farmers	Percentage
Rice/Paddy	43	59
Wheat	9	12
Potato	14	19
Groundnut	7	10
<b>Total</b>	<b>73</b>	<b>100</b>

**Source:** Author's calculation based on field survey

Table No.1.6 depicts that (59%) of the farmers go for paddy insurance, (19%) of the farmers go for potato insurance, (12%) of the farmers go for wheat insurance and the rest (10%) go for groundnut insurance.

**Table No.1.7**  
**Level of satisfaction of farmers on the prevailing Crop Insurance Schemes**

Satisfaction Level	Number of Farmers	Percentage
Satisfied	13	18
Highly Satisfied	7	10
Neutral	14	19
Dissatisfied	39	53
<b>Total</b>	<b>73</b>	<b>100</b>

**Source:** Author's calculation based on field survey

Table No.1.7 depicts that the awareness level of farmers about crop insurance schemes in the study areas is not satisfactory at all. Farmers are not fully satisfied with the crop insurance schemes implemented by the Government. From the total farmers (53%) of them are dissatisfied with the prevailing crop insurance schemes, (18%) of them are satisfied, (10%) of them are highly satisfied while (19%) of them have no any opinion about the crop insurance schemes.

**Table No.1.8**  
**Reasons for dissatisfaction of farmers on the existing crop insurance schemes**

Reasons	Number of Farmers	Percentage
High Premium	39	53
Less Subsidy	19	26
Delay in claim settlement	15	21
<b>Total</b>	<b>73</b>	<b>100</b>

**Source:** Author's calculation based on field survey

Table No.1.8 depicts that most of the farmers (53%) are dissatisfied with the existing crop insurance schemes because of the high premium rate, (21%) of them are dissatisfied with the procedure of delay in claim settlement and the rest (26%) of them are dissatisfied with less subsidy of the government.

## Testing of Hypothesis

Table No.1.9

### Level of awareness and educational qualifications

Level of Awareness	Educational Qualification				
	No Formal Education	Under Matric	Matric	Degree	Total
Aware	6	7	6	10	29
Not Aware	21	12	11	6	50
No Opinion	9	8	7	7	31
Total	36	27	24	23	110

Source: Author's calculation based on field survey

Table No-1.10

### Computation of Chi Square

O	E	(O-E)	(O-E) <sup>2</sup>	$\frac{(O-E)^2}{2}$
6	10	-4	16	1.6
21	16	5	25	1.5625
9	10	-1	1	0.1
7	7	0	0	0
12	12	0	0	0
8	8	0	0	0
6	6	0	0	0
11	11	0	0	0
7	7	0	0	0
10	6	4	16	2.6667
6	10	-4	16	1.6
7	7	0	0	0
<b>Total =110</b>	<b>Total =110</b>	<b>Total =0</b>	<b>Total =73</b>	<b>Total=7.5</b> <b>29</b>

Source: Author's calculation based on field survey

$$d.f. = (r-1)(c-1) = (3-1)(4-1) = 6$$

$$X^2_{0.05} \text{ for } 6 \text{ d.f.} = 12.592$$

Since the calculated value of  $X^2$  is less than the tabulated value, it is not significant. Hence, null hypothesis may be accepted at 5% level of significance and it can be concluded that there is no association between the levels of awareness of farmers about Crop Insurance and their educational qualifications.

## Findings

1. The awareness level of farmers about crop insurance in the study areas is not satisfactory at all. Most of the farmers are not aware about the existing crop insurance schemes of the government.
2. Banks play an important role in providing adequate information about crop insurance to farmers followed by Newspaper and other electronic media.
3. It is the opinion of farmers that the maximum crop loss arises due to less rain as compared to pests and natural calamity.
4. Farmers usually go for paddy insurance followed by Potato, Wheat and Groundnut.
5. The existing crop insurance schemes of the government have failed to attract more and more number of farmers.
6. High premium rate, less premium subsidy and delay in the settlement of claims are the main

reasons behind the dissatisfaction of farmers on the prevailing crop insurance schemes.

7. There exists no relationship between the levels of awareness of farmers about crop insurance and their educational qualifications.

## Suggestions

1. The govt. should come forward to increase the awareness level of farmers about crop insurance in all villages.
2. Crop insurance should be made compulsory to all farmers availing crop loans from the Commercial Banks and Cooperative Banks.
3. Awareness campaign should be conducted frequently by the government from time to time in the village level to increase the awareness level of farmers about crop insurance.
4. The existing crop insurance schemes must be redesigned to attract more and more number of farmers.
5. The claim settlement procedure should be faster. It should be settled within the season.
6. The government should give more incentives to attract more and more number of farmers in the fold of crop insurance.
7. The crop insurance schemes must be flexible and cover all types of major crops of both Kharif and Rabi seasons.

## Conclusion

With the change of time the agriculture sector is changing very fast. Indian agriculture is prone to a variety of risks. Crop insurance is a risk management tool which transfers the risk of farmers associated with agriculture. The awareness level of farmers about crop insurance in the study area is very poor. They are not fully aware about the existing crop insurance schemes implemented by the government. Most of the farmers are dissatisfied with the existing crop insurance schemes only because of its high premium rate and delay in the claim settlement procedures. The government should give more importance to review the existing crop insurance schemes and design them in such a way that farmers will be automatically motivated to participate in the crop insurance programme. It is a big task for the government to increase the awareness level of farmers about crop insurance. The government should give more premium subsidy to motivate farmers to opt for crop insurance. Awareness campaign should be conducted by the government frequently in the village level to enhance the education and awareness level of farmers about crop insurance. It is also a big challenge for the policy makers to design crop insurance schemes which will be more beneficial to both farmers as well as to the government at large.

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