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RESEARCH ARTICLE

Stakeholders' Analysis in Agricultural Insurance Service System: A Special Focus on Farmer's Knowledge and Attitude

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ABSTRACT

Agricultural insurance or crop insurance is defined as protection against either the loss of crops due to natural disasters, such as hail, drought, and floods, or the loss of revenue due to declines in the prices of agricultural commodities given to agricultural producers and subsidized by the government. The research desired to find out the stakeholders of agricultural insurance service system, different roles and responsibilities played by them, and to measure the knowledge and attitude level of farmers towards agricultural insurance. It was found that the majority of farmers were knowledgeable (80%) and had a positive attitude (78%) toward the agricultural insurance service system. It was observed that education, income, knowledge about agricultural insurance, risk proneness and cosmopoliteness of the farmers have significant and positive correlations with attitude of the farmers towards agricultural insurance whereas age and land holding of the farmers have negative and significant relations with the dependent variable. The present study enables the farmers to have good communication with the extension professionals working in their villages.

***Key words**: Agricultural insurance; Stakeholders; Attitude; Knowledge level.*

Insurance is an association through which agency or the nation undertakes to offer an assurance of repayment for special loss, damage, infection or loss of life in return for price of a special premium. It is used to offer safety towards a likely eventuality and commonly used to hedge towards the chance of a contingent or certain loss. India's food security depends on an increase in the production of food (*Barman et al, 2017*). Agricultural insurance (crop insurance) is purchased by agricultural producers and subsidised by the government, to protect against either the loss of their crops due to natural disasters, such as hail, drought and floods, pests and diseases, or the loss of revenue due to decline in the prices of agricultural commodities. Agricultural insurance is a policy in which a small amount of premium is to be paid to an insurance company in exchange for a guarantee against loss due to any of the dangers covered for a set length of time. Crop insurance initially evolved and implemented in Mexico, Japan, Australia, United States and Brazil. These experiences and those of other countries provide lessons, the design and management of agricultural insurance programmes about the role of crop insurance as a public risk management policy. Countries such as the United States, Japan, Brazil, Sri Lanka, Mauritius and Mexico have several decades' experiences with publicly supported crop insurance programmes (*Dhayal et al 2018*). India became highly susceptible to floods, untimely rains, drought and other natural calamities. Thus it is felt necessary to protect the farmers from losses caused by natural calamities and ensure their credit eligibility for the next season. As per the report of *The Hindu (2020)*, 72 lakh hectares of farmland was hit by floods and drought. Indian farmers are mostly relying on weather conditions to grow their crops and hence there is a need to protect farmers from agriculture variability. Price fluctuations of agricultural crops are high and this necessitates insurance against income failure.

Agricultural production is associated with various types of risk, the most significant ones being variability in crop yield and income, due to erratic behaviour of the

weather. The uncertainty of crop yield is one of the basic risks that every farmer has to face. Indian agriculture is heavily dependent on uncertainty of the weather cycle makes agriculture a highly risky venture. (*Mohapatra et al 2012*). Agriculture 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 fluctuations etc (*Goudappa et al 2012*). Agricultural inputs, technology, policies, etc. are seemed to be some of the important factors of conventional agriculture and indeed it's a common notion among stakeholders of agriculture. But climatic aberration and its consequent crop failure have made the notion null and void with a point of no return and a huge loss to the farming community. The loss due to sudden crop failures may not always be physical or monetary, in a higher magnitude, it makes the farming family vulnerable and leads to the most unprecedented cases like farmers' suicide, an indicator of human hardship. Though, in many cases, the causes of these deaths remain understudied and unreported, particularly in developing countries like India (*Carleton 2017, Bhatia et al. 2019*). In this perspective, the agricultural insurance service system has been playing a pivotal and prime role in case of crop failures and made a significant place in Agricultural Service System.

This system involves multiple stakeholders to efficiently run the service system. There is a need to understand stakeholders' perspectives on the different aspects of the system. Attitude is operationalised as the degree of positive or negative feeling of farmers towards the technologies communicated by extension services (*Kumar and Ratnakar, 2011*). Favourable attitude is essential for acceptance of any scientific innovation (*Kanwat et al, 2011*). The cognitive component of an attitude consists of the beliefs, which involves attributes like favorable or unfavorable, desirable or undesirable, good or bad etc (*Chandra and Kumar, 2007*). Again the knowledge and attitude of farmers about the crop insurance system are equally important prerequisites for efficiently managing the crop insurance system. Apart from that problems faced by the stakeholders and its remedial measures have strong bearings on the promotion of agri-insurance system among the masses. The present research tried to focus on these issues which are relatively unknown to policymakers, agricultural insurance executives, agricultural extension officers and fellow researchers. Even stakeholders need to know how the system operates through various phases.

METHODOLOGY

The investigation of this study was carried out in three blocks namely Tikabali, Parjang and Baliapal of three districts namely, Baleswar, Dhenkanal and Kandhama of the state of Odisha. According to reports of Ministry of Agriculture and Farmers Welfare, Govt. of India for the Financial Year 2019-2020, 18.688 lakh ha area was insured under the insurance program and 12.078 lakh farmers were benefitted from this programme in the state of Orissa. The programme runs at a good success rate in these 3 districts of Odisha. The three districts have unique social, cultural and ecological backgrounds in particular, which influence the living standard and behavioural patterns of the people in many ways (*Giri, 2017*). The study covered different stakeholders of the programme such as Assistant Horticulture Officers (AHO), Assistant Agriculture Officers (AAO), Bank Officials and Insurance agents. The main interview schedule was sent through different WhatsApp groups of AAO, AHO, and Bank Officials. The number of responses received after three reminders, were 53 and it constitutes the sample, consisting of 16 Assistant Agriculture Officers, 15 Assistant Horticulture Officers, 12 Bank officials, and 10 Insurance Agents. A similar procedure was followed for farmers of the aforementioned three districts. Fifty-two respondents (non-loanee) farmers reciprocated to the schedule at this pandemic period from three blocks.

As the Agricultural Insurance Service System involves multi-stakeholders, their importance, influence, roles matter a lot. Understanding stakeholders' involvement delivery mechanism is a prerequisite for successful implementation of programme. Stakeholders' identification was made after identifying the potential stakeholders associated with agricultural insurance in the present study. The analysis was done according to the procedure followed by *Devarani and Basu (2010).* Stakeholder analysis checklist was prepared for this purpose.

The knowledge level of farmers was measured by knowledge test developed for the study following methodology suggested by *Bloom (1956).* The data

for item analysis (*Edward and Kilpatrick, 1974*) was collected from 40 non-sample farmers on 20 items. After item analysis 16 items were retained and the reliability coefficient (0.75) was calculated using Kuder Richardson 20 formula (*Allen and Yen 1979*) which is expressed

$$\rho_{KR20} = \frac{k}{k-1}\left(1 - \frac{\sum_{j=1}^{k} p_j q_j}{\sigma^2}\right)$$

where

k = number of questions

p_j = number of people in the sample who answered question j correctly

q_j = number of people in the sample who didn't answer question j correctly

σ^2 = variance of the total scores of all the people taking the test.

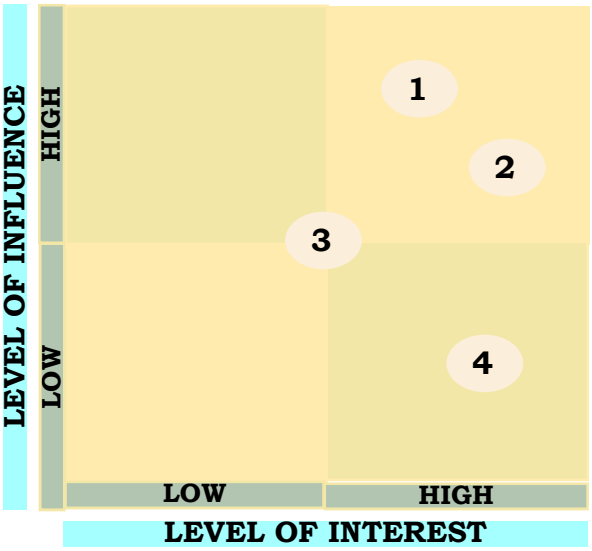
Attitude of the farmers towards Agricultural Insurance service was assessed by applying a scale constructed for the present study (*Likert, 1932*). Judges' rating of the statements were obtained from forty-five respondents and eleven items were retained out of seventeen items. Split Half technique was used to measure the reliability of the measurement tool on non-sample respondents (*Kothari 1990*). Coefficient of reliability was calculated by Rulon's Formula (*Guilford, 1954*), which was 0.70 and correlation coefficient was calculated by using the Spearman-Brownn correction. The coefficient of reliability was calculated to be 0.71, which implies that the measurement tool was found to have higher degree of reliability (*Guilford, 1954*).

Data were collected in the month of May and June 2021 on primary and secondary stakeholders. Schedule consisted of background information of the farmers, selected variables (age, education, land holding status, knowledge about crop insurance, risk proneness, cosmopoliteness, and attitude towards crop insurances) and open ended question for identifying problems.

RESULTS AND DISCUSSION

Stakeholders analysis of agricultural insurance system : The study considered set of stakeholders involved in agricultural insurance system namely, such as state agriculture departments (29%), banking institutions (11%), insurance agencies (9%), and farmers (49%). Roles and responsibilities of different stakeholders involved in Agricultural Insurance System are presented in figure 1.

State department of agriculture: The Agriculture Department mainly consists of 3 executive wings namely, Directorate of Agriculture, Directorate of Horticulture, Directorate of Soil Conservation and Watershed Development. Among the three wings Directorate of Agriculture and Directorate of Horticulture provide Agricultural Insurance System. Under the Directorate of Agriculture and Horticulture at block level Assistant Agriculture Officer and Assistant Horticulture Officer facilitates the farmers in providing insurance. Their main roles and responsibilities lies to educate the farmers on the features of scheme, in guiding the farmers in filling up the proposal forms & collecting the required documents, to prepare the consolidated statements for loanee & non loanee members, forwarding the same to the branch along with premium amount, in maintaining the records of proposal forms, other relevant documents, statements for the purpose of verification of district committee or representative of the insurer, identifying the crops and beneficiaries under crop insurance programme, conducting meetings and get involved while deciding the scale of finance, obtaining feedback while assessing the claim from the farmers. The main interest of these stakeholders lies in increasing the success rate of the programmes. Their impact over this initiative is positive. The importance and influence over initiative are high.



1.State department of agriculture, 2.Banking institutions, 3.Insurance agencies, 4.Farmers

Figure 1. Stakeholders analysis matrix

Banking Institution: Institutional credit was designed to play a significant part in India's agricultural development. The disbursement of loans to agriculture involves a significant number of institutional bodies. Agriculture finance is a critical component for increasing agricultural productivity and assisting

India's poorest farmers in satisfying their investment needs. The main roles are to provide financial support to farmers, facilitate access to short-term credit to farmers, simplifying the credit mechanism, so that farmers can receive credit on time and to make payments on the account of the claims to the eligible insured farmers. The interest in initiative is to increase the amount of loan disbursement. The impact over the initiative is positive. The importance and influence over the initiative are high.

Insurance agencies: Insurance companies are aided by the government in a variety of ways, including covering all or part of the administrative costs, sharing a portion of the indemnity; and paying a portion of the premium to ensure that farmers can afford insurance. Covering a broad pool of risk exposure, which allows insurance companies to spread their risk among consumers with different sources of income, over geographic areas and time, is a crucial step in decreasing risk for financial institutions when creating insurance products. The primary goal of insurance is to protect the insurer from the risks covered by the policy. The major roles are to decide scale of finance, in deciding the premium rates/ premium subsidies for the crop, make inspection visit to the field for claim settlement and prepare the consolidated statements for loanee & non-loanee members, forwarding the same to the branch along with premium amount. The major interest is to get a good amount of interest rates.

Farmers: Farmers are the most influential stakeholder group when making final decisions about land use. It allows farmers to obtain credit and finance to invest in new technologies, tools and equipment in order to improve and maintain their production capacity. The major responsibilities are to have an account in the branch of the designated bank, to approach the designated branch / Primary Agricultural Cooperative Society and submit the proposal form in the prescribed format, to provide documentary evidence in regard to the possession of cultivable land. The main interest lies in getting protection against undesirable risks.

Level of knowledge about agricultural insurance : Table 1 described the status of respondents according to their level of knowledge towards agricultural insurance. The median spilt method was followed to categorize the respondents into three groups, high, medium and low level of knowledge with 46.2 per cent, 23.1 per cent and 30.8 per cent participation respectively. The majority of population had a high level of knowledge score. These findings on agricultural insurance are almost similar to the findings conducted on livestock insurance. (*Mohapatra et al, 2016*)

Level of attitude of farmers towards agricultural insurance : Table 2 described the status of respondents according to level of attitude towards agricultural insurance. Median spilt technique was followed to categorize the respondents into three groups namely high, medium and low with 34.6 per cent, 34.6 per cent and 30.8 per cent of the share in the total population respectively. It is observed that an equal proportion of respondents belonged to all three categories of attitudinal score.

Table 1. Distribution of respondents according to level of Knowledge about agricultural insurance (N=52)

Category	No.	%	CP
Low	16	30.8	30.8
Medium	12	23.1	53.9
High	24	46.2	100.0
Total	52	100.0	

Min. 9.00; Max. 16.00; Mean 12.53; S.D 1.92; CP=Cumulative percentage

Table 2. Distribution of respondents according to level of attitude towards agricultural insurance (N=52)

Category	No.	%	CP
Low	16	30.8	30.8
Medium	18	34.6	65.4
High	18	34.6	100.0
Total	52	100.0	

Min. 41.00; Max. 55.00; Mean 47.00; S.D 4.02; CP=Cumulative percentage

Table 3. Relationship of selected independent variables with levels of knowledge of the farmers about agricultural insurance (N=52)

Variables	"r"
Age	-0.6988**
Education	+0.7543**
Land Holding	-0.2764
Income	-0.1983
Risk proneness	+0.6889**
Cosmopoliteness	+0.6428**

***Significance at level of 0.01*

Relationship of selected independent variables with knowledge about agricultural insurance : It was observed in Table 3 that independent variables such as education, risk proneness and cosmopoliteness were positively and significantly correlated with the knowledge towards agricultural insurance. Age had a negative and significant correlation with knowledge.

Table 4. Relationship of selected independent variables with attitude towards agricultural insurance (N=52)

Variables	"r"
Age	-0.4589**
Education	+0.6243**
Land Holding	-0.4586**
Income	+0.5925**
Risk proneness	+0.7234**
Knowledge about Agricultural Insurance	+0.8091**
Cosmopoliteness	+0.6603**

***Significance at level of 0.01*

Landholding and income were found to be insignificant with the knowledge of agricultural insurance.

Relationship of Selected Independent Variables with Attitude towards Agricultural Insurance : From Table 4, it was observed that independent variables like education, income, risk proneness, knowledge about agricultural insurance and cosmopoliteness were positively and significantly correlated with the attitude towards agricultural insurance. Age and Landholding had a negative and significant correlation with attitude.

CONCLUSION

Considering the stakeholders' roles and responsibilities it may be suggested that the agri-insurance personnel should be more proactive for dissemination of programmes. Farmers' groups (formal or informal) should also be organized and exposed to various beneficial dimensions of agricultural insurance schemes towards higher participation in the programme. Attitude of farmers towards agricultural insurance coupled with a higher level of knowledge about it has strong bearings of its growth in recent times. Although the awareness regarding agriculture insurance among the farmers is high, there is still scope of improvement by organizing awareness campaigns before crop seasons supplemented by promotions through mass media including social media too.

CONFLICTS OF INTEREST

The authors have no conflicts of interest.

REFERENCES

Allen, M.J. and Yen, W.M. *Introduction to Measurement Theory*. Monterey, CA: Brooks/Cole, 1979, pp. 78-84

Anonymus (2020). The Hindu. '72 lakh hectares of farmland hit by floods and drought' Febuary, 11. Available-https://thehindubusinessline.com [March 11, 2021].

Barman,S.; Doley, N. and Thakuria, R.K. (2017). Impact of farmers' training programme on scaling up of water productivity in agriculture - An analytical study in Assam. *Indian Res. J. Ext. Edu.,* 17 (2): 24-28.

Bhatia, S.K.; Kaur, J. and Singh, H. (2019). Cotton crop failure and farmer suicides in the Malwa region of Punjab: What does it reveal?. *J. Glob. Eco.,* **15**(2), 83-94.

Bloom, B.S.; Engelhart, M.D.; Furst, E. J.; Hill, W.H. and Krathwohl, D.R. (1952). Handbook I: Cognitive Domain. David McKay, New York, 1956, pp 62- 86.

Carleton, T.A. (2017). Crop-damaging temperatures increase suicide rates in India. *PNAS,* **114** (33): 8746-8751

Chandra, N. and Kumar, S. (2007). A scale to measure farmer's attitude towards improved agricultural practices. *Indian Res. J. Ext. Edu.,* 7 (2&3): 30-31.

Devarani, L. and Basu, D. (2010). Participatory vulnerability analysis of conservation activities in Loktak Lake, Manipur. *Envir. & Ecol.,* **28** (1A): 247-250.

Dhayal, B.L.; Bairathi, R. and Sharma, A.K. (2018). Perception of farmers towards Pradhan Mantri Crop Insurance Scheme. *Indian Res. J. Ext. Edu.,* 18 (1): 53-57.

Edward, A.L. and Kilpatrick, F.P. (1974). A technique for constructions of attitude scales. *J. Appl. Psy.,* **32**: 374-384.

Giri, S.K. (2017). Cultural History of Odisha. Om publications, Bhubaneswar. pp. 123-162.

Goudappa, S.B.; Reddy, B.S. and Chandrashekhar, S.M. (2012). Farmers perception and awareness about crop insurance in Karnataka. *Indian Res. J. Ext. Edu.,* 12 (4): 218-222.

Guilford, J. P. (1954). Psychometric Methods. New York: McGraw-Hill, 1954, pp. 154- 176.

Kanwat, M.; Chargotra, M; Kumar, P.S. and Mishra, B.P. (2011). Attitude of the agricultural graduate towards agri-clinic and agri business centres in Arunachal Pradesh. *Indian Res. J. Ext. Edu.,* **11** (1): 117-119.

Kothari, C.R. (1990). Research Methodology (2nd Ed.). New Age International (P) Limited, New Delhi, 1990, pp. 69-94.

Kumar, P.G. and Ratnakar, R. (2011). A scale to measure farmers' attitude towards ICT-based extension services. *Indian Res. J. Ext. Edu.,* **11** (1): 109-112.

Likert, R. (1932). A technique for the measurement of attitudes. *Arch. Psy.,* **22** (140): 55.

Mohapatra, L.; Dhaliwal, R.K. and Kaur, M. (2012). Agricultural insurance schemes as a mitigation strategy for climate change- problems there off. . *Indian Res. J. Ext. Edu.,* 12 (4): 25-27.

Mohapatra, L.; Dhaliwal, R.K. and Kaur, M. (2016). Farmers knowledge about the agricultural insurance scheme in Punjab. *Indian Res. J. Ext. Edu.,* 16 (1): 49-53.

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