

## RESEARCH NOTE

## Performance of Agricultural Insurance in Punjab State of India

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### ABSTRACT

Agricultural Insurance is a financial mechanism, which minimizes the uncertainty of loss in crop production, by factoring in a large number of uncertainties, which impact crop yields distributing the loss burden. The significant presence of the risk mitigating instrument “Agricultural Insurance” in the state needs to be studied in terms of area coverage, the crops being covered and many other aspects. The variable in this study is “performance” which is operationalized as the functioning of Agricultural Insurance Schemes in Punjab. The research instrument; a questionnaire was being prepared for gathering information. The highest number of farmers and livestock were being covered by National Insurance Company Ltd. i.e 31,000 and 2, 48,000 respectively. The livestock insurance is a successful scheme in the state since the overall ratio of premium to compensation provided is more than 1. In the state AIC piloted Weather Based Crop Insurance Scheme (WBCIS) for paddy crop during Kharif, 2008 in the Kalanaur block of Gurdaspur district of Punjab state. The other two companies who had presence in the state offering weather insurance were IFFCO-Tokio General Insurance Company Ltd. (ITGI) and ICICI Lombard General Insurance Company Ltd. The highest number of farmers was insured by IFFCO-Tokio General Insurance Company Ltd. (ITGI) with the highest amount of operational area covered i.e. 21,386 acres. The success and efficiency of the weather insurance depend a great deal on establishing accurate correlation between productivity levels and weather variations.

**Key Words:** *Weather Insurance; Cattle Insurance; Performance; Weather variations;*

Agriculture being a highly risky economic activity, due to its critical dependence on weather conditions; the designing and implementation of an appropriate agriculture insurance programme is a complex and challenging task. Agricultural Insurance is a financial mechanism, which minimizes the uncertainty of loss in crop production, by factoring in a large number of uncertainties, which impact crop yields distributing the loss burden. Punjab, the leader of green revolution in Indian subcontinent is the largest surplus state in terms of food grain production. The agriculture here is dominated by rice-wheat production systems which are low risk crops under assured irrigation conditions (Sidhu & Vatta, 2012). The various agricultural insurance schemes functioning in the state were reviewed; of which, two types of schemes were functioning. The one refers to the weather insurance which runs on the basic idea of estimating the percentage deviation in crop output due to adverse changes in weather condition. Weather

index based crop insurance scheme (WBCIS) is an avenue for transferring production risk to the insurer (Singh, 2010). It aims to mitigate the hardships of the insured farmer against the likelihood of financial loss on account of anticipated crop loss resulting from incidence of adverse conditions of weather parameters like rainfall, temperature, frost, humidity, etc. It operates on the concept of “area approach”, whereby each reference unit area (RUA) is linked to a reference weather station (RWS) and all farmers in a given RUA are deemed to have suffered the same level of adverse weather incidence. Apart from weather insurance, the livestock insurance, consisting mainly of cattle insurance, is being implemented by the four public sector general insurance companies in the state. Under the various Livestock Insurance Policies, cover is provided for the sum insured or the market value of the animal at the time of death, whichever is less. Animals are insured up to 100 per cent of their market value normally.

The 'agricultural insurance' could, therefore, be considered not only as a hedge to protect farm economy from the adverse effect of crop failure and animal death but also as an incentive to the farmer to shoulder risk of using new technology and affecting improvement in farming (Ardhanareeswaran, 1985). Thus it can be used as an important instrument of social and economic policy to be pursued by the state for the protection of farmers against unforeseen losses, to adapt to the effects of climate change. Livestock is a viable enterprise along with farming in each and every farm household of Punjab. The initial investment for livestock is quite high and if any disaster strikes leading to the death of the animal, it further adds to heavy losses to the farmer. But if insurance is provided for the livestock then it can give security and financial help to the framers in case of losses. The significant presence of the risk mitigating instrument "Agricultural Insurance" in the state needs to be studied in terms of area coverage, the crops being covered and many other aspects. There is a need for knowing the reason behind this mismatch, which has its ultimate bearing on the farmers of the state. For which the detailed functioning of the Agricultural and Livestock Insurance Scheme in the state have to be known which can help to resort to a solution to some of the burning problems of the agrarian society viz., farmers' suicide, diversification of agriculture etc. which are very much related to the risk in the agricultural enterprise. So, this study has been planned to entail the performance of the existing insurance scheme in the state.

## METHODOLOGY

The variable in this study is "performance" which is operationalized as the functioning of Agricultural Insurance Schemes in Punjab. It has been ascertained in terms of coverage of farmers under the scheme, the benefits extended to farmers by the insurance companies, the area covered under the scheme, sum insured, premium paid by the farmers, the number of

claims and amount passed to the farmers, the level of compensation provided, number of animals insured, total premium collected, amount of claim paid and amount of subsidy provided for Agricultural and Livestock Insurance. The research instrument; a questionnaire was prepared for gathering information. It consisted of questions such as the benefits extended to farmers by the insurance companies, the area covered under the scheme, sum insured, premium paid by the farmers, the number of claims and amount passed to the farmers, the level of compensation provided, number of animals insured, total premium collected, amount of claim paid and amount of subsidy provided for Agricultural Insurance. The questionnaire was being mailed to the personnel of various insurance company followed by personally contacting them for their earliest response. The data was collected for the past five years.

## RESULTS AND DISCUSSION

*Livestock Insurance:* The data collected accordingly were compiled and are given in Tables 1 and 2 for both livestock and weather insurance respectively. The performance of the livestock insurance or more categorically the cattle insurance for the past five years has been illustrated in Table 1. As it can be seen from the table that there are four major players in providing livestock insurance in the state viz. i) The New India Assurance Company Ltd. ii) Oriental Insurance Company Ltd. iii) United India Insurance Company Ltd. and iv) National Insurance Company Ltd. The highest number of farmers and livestock were being covered by National Insurance Company Ltd. i.e 31,000 and 2,48,000 respectively. The premium collected was 2400 lakhs of which the compensation being provided was 960 lakhs which is also highest among the four. The lowest number of farmers were being covered by Oriental Insurance Company Ltd. i.e 18,000 and the numbers of livestock covered were also lowest i.e.32,100. The premium collected was 520 lakhs of

**Table 1. Performance of Livestock Insurance Scheme according to the insurance agencies (During the last five years)**

Insurance agency	Covered (No.) farmers	Premium collected amount (Lakhs)	Covered (No.) livestock	Compensation provided Amount (Lakhs)
New India Assurance Company Ltd.	25500	1300	128000	640 (2.03)
Oriental Insurance Company Ltd	18000	520	32100	230 (2.26)
United India Insurance Company Ltd	22500	640	45000	415 (1.54)
National Insurance Company Ltd.	31000	2400	248000	960 (2.50)

which the compensation provided was 230 lakhs. The data in Table 1 reveal that 22,500 farmers and 45,000 livestock were covered by United India Insurance Company Ltd. It has collected a premium amount of 640 lakhs of which 415 lakhs of compensation was provided. The farmers and livestock covered by New India Assurance Company Ltd. were 25,500 and 640 respectively with premium amount collected was 1300 lakhs of which 640 lakhs compensation was provided. The livestock insurance is a successful scheme in the state since the overall ratio of premium to compensation provided is more than 1. Such trends can be explained; since livestock insurance is credit linked, automatically the cattle get insured. The compensation is also hassle free since after the farmer informs the bank about the death of animal; the claim is done and the compensation amount is directly credited to the loan accounts which lead to further closure of loan accounts. In such a process the farmer and the insurance company both are well liasoned by the financial institutions which provide credit. This also highlights that the non borrower farmers are hardly insuring their animal thus taking risk was in function which requires apt popularisation of insurance scheme among them. This can be done through various mass media like newspapers, television, radio etc. The personnel of the state line department at the block level and the village level extension worker should also raise awareness campaigns regarding the same.

*Weather Insurance* : In the state, AIC piloted Weather Based Crop Insurance Scheme (WBCIS), for paddy crop during *Kharif*, 2008 in the Kalanaur block of Gurdaspur district of Punjab state. The farmers insured under this scheme were non loanee farmers. The company has contacted the farmers directly. The administrative officers were deputed to the district since for Punjab state there is no local office which are

popularly known as *Krishi Bima Sansthan*. The other two companies that had presence in the state offering weather insurance were IFFCO-Tokio General Insurance Company Ltd. (ITGI) and ICICI Lombard General Insurance Company Ltd. IFFCO-Tokio General Insurance Company Ltd. (ITGI) operates in the state by serving the farming community through the cooperative model; lateral service centres are there in the distict level and *Bima Kendras* at the tehsil level. These offices are staffed by “*Bima Sahayaks*” who educate the village co-operative society staff and the farmers about the product at the time of enrolment. The private sector giant; ICICI Lombard General Insurance Company Ltd. has showed its presence in the state in offering weather insurance for crops; wheat, paddy and potato. The performances of weather insurance scheme implemented by these three companies have been illustrated in Table 2. The data in the table reveal that the highest number of farmers was insured by IFFCO-Tokio General Insurance Company Ltd. (ITGI) with the highest amount of operational area covered i.e. 21,386 acres. Moreover it has also collected the highest premium amount which figured at 142.84 lakhs. The total number of insured farmers who were compensated was 1968 and amount being compensated was 166.87 lakhs; which is also the highest among the three companies. It is interesting to note that the amount of compensation provided was higher than the premium amount being collected by the company. Such trends can be explained; since the weather data is recorded at the taluka level which may result in the actual impact of adverse weather condition at the farm location being significantly different from that recorded by the Reference Weather Station (RWS). The success of the product is critically dependent on availability of accurate weather data on a daily basis as also without gaps. At

**Table 2. Performance of Weather Insurance Scheme according to the insurance agencies (During last five years)**

Insurance agency	Farmers covered (No.)	Crops covered (No.)	Operational area (acres)	Premium (lakhs)	Compensation Provided	
					No. of Farmers	Amount (lakhs)
Agriculture Insurance Company Ltd	17	1	237.5	0.534*	–	–
IFFCO-TOKIO General Insurance Co. Ltd.	4200	2	21,386	142.84	1968 (46.87)	166.87 (0.85)
ICICI-Lombard General Insurance Co. Ltd	6478	3	20,215	123.01	725 (11.19)	52.63 (2.33)

\*(1.60 : Subsidy)

the same time, the necessity of installing a large number of weather stations to bring down the basis risk to an acceptable level would also result in high start up costs, thus negating the cost advantage of index-based weather insurance over traditional insurance for the insurer. It insured two crops namely paddy in the *kharif* and wheat in the in the *rabi* season. It can be further concluded from Table 2 that Agricultural Insurance Company Ltd. (AIC) has just piloted the scheme; Weather Based Crop Insurance Scheme WBCIS covering 17 numbers of farmers and insured paddy crop in the *kharif*. It covered an area of 237.50 acres with a total of premium collected amounting to 0.534 lakhs. This premium collected from the farmers was low since it was subsidized; equally by the state and the centre amounting to 1.60 lakhs. The premium collected from the farmers was at a rate of 2.5% with rest 7.5% being equally contributed by the state and central government. There was no compensation being provided to the insured farmers. ICICI Lombard General Insurance Company Ltd. offers weather based index insurance covering three crops *viz.* paddy, wheat and potato. The difference in the number of farmers being insured by IFFCO-Tokio General Insurance Company Ltd. (ITGI) and ICICI Lombard General Insurance Company Ltd. is half i.e numbers of farmers insured by ICICI Lombard is 2050 whereas by ITGI is 4200 but the difference in premium amount is very less. This can be explained as ICICI Lombard has a higher rate of premium than ITGI

as the premium is paid by the contracting company Pepsico on behalf of the contract farmers growing potato. Moreover data in Table 2 reveals that the number of farmers being compensated and the amount of compensation is comparatively less than ITGI i.e only 11.19% farmers were compensated.

## CONCLUSION

The success and efficiency of the weather insurance depend a great deal on establishing accurate correlation between productivity levels and weather variations. It is extremely complex to estimate the correlation arising out of the interactive nature of various agricultural inputs. The complexity of variables such as temperature, relative humidity, wind speed, etc, also comes in the way of establishing correct correlation. However, the effectiveness of index insurance as a risk mitigation tool depends on how positively correlated farm-yield losses are with the weather index. A poor construction of the index while benefiting the insurer would result in a mismatch between payoffs and actual farmer losses. Also, unless the index is based on a weather variable that is the dominant cause of loss in the region, basis risk will be unacceptably high.

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