Agriculture Efficiency

Farmer Participation in Paddy Crop Insurance: Evidence from Trincomalee District

Muneesa Begam and **Ponniah Sivarajah**

Department of Agricultural Economics, Eastern University, Chenkalady-30350 (EP)
sivaponniah@yahoo.com

BACKGROUND

Recent climatic changes in Sri Lanka had caused irregular rainy seasons that lead to floods, droughts, storms and uneven temperature variations, leading to risk and uncertainty in paddy production and incomes of farmers. Pest attacks and disease also cause significant losses in production and income. Various schemes have evolved over time in different countries to protect farmers from risks, among them guaranteed prices, subsidized credit and crop insurance. There are several crop insurance schemes that have been introduced by the Government in recent years, mainly by organizations such as Agricultural and Agrarian Insurance Board (AAIB) and Ceylinco Insurance Company Limited (CICL) which insure crops in Sri Lanka.

Crop insurance is recognized as a basic instrument for uncertainties in production, and stabilize farm incomes by promoting technology, encouraging investment and increasing credit flow in the agricultural sector. It contributes to self-reliance and self-respect among farmers, since in cases of crop loss they can claim as a matter of right (Chandrakanth, 1976). Thus, crop insurance cushions the shock of crop loss by assuring farmers protection against natural hazards beyond their control.

Trincomalee is located in the dry zone of Sri Lanka. Rain fed paddy cultivation is more common here than other irrigation methods. Due to heavy rain, floods cause crop damage. Inadequate rain causes

drought. Rain during the harvesting season also leads to losses in production. Extension services and awareness about crop insurance among farmers are very low. The office for crop insurance is far from farming villages and procedures in insuring crops are perceived to be difficult. So farmers are unwilling to participate in crop insurance scheme. Even if crops are insured, the compensation received each season is not satisfactory. The objective of this study was to analyze farmers' awareness of paddy crop insurance, the existing problems in adopting crop insurance, and the factors affecting adoption of crop insurance in Kinniya Divisional Secretariat Division, Trincomalee.

METHODOLOGY

The farmers were selected from nine (09) Farmer Organizations out of nineteen (19) according to the extent of paddy cultivation. The selected Farmer Organizations were Poovarasantheevu, Theenery, Pattiyanoor, Kandalkaadu Sinnavely, Panichchankulam, PanichchankulamWest, Naduoothu, Maniyarasankulam and Ayiliyadi. Simple random sampling method was used to select the samples. 50 paddy farmers were selected from each extent category i.e., less than 2acs, 2-5acs and more than 5acs. Thus the final sample comprised of 150 paddy farmers. The analysis was done using the SPSS 14V software and descriptive statistics; ANOVA and regression analysis was performed.

RESULTS AND DISCUSSION

Socio economic characteristics of the paddy farmers were analysed to understand managerial ability.

The average age of a paddy farmer was 46 years old. It was observed that 80.7% of respondents were involved in paddy cultivation as a part time occupation and had about 14 years' experience. The educational level of farmers was measured in the years of schooling.

According to the survey, the average paddy farmer received 10 years of schooling. Average monthly income was Rs.14, 778.

Table 1: Paddy Farmers' Socio Economic Characteristics (N=150)

Trait	Mean	Std. Deviation
1. Age of respondent (years)	45.70	11.48
2.Educational level (years of schooling)	9.88	3.10
3.Income of respondent (Rs/month)	14,788	6,942
4.Family size (No. of persons)	3.99	1.30
5.Experience in farming (years)	13.97	10.21

Source: Field Survey data, 2014

Adoption of Paddy Crop Insurance

About 80% of the farmers in the study area had adopted crop insurance. Only 16% of farmers were non- adopters. About 4% of the farmers had discontinued crop insurance. The extent of paddy land insured was analyzed and is shown in the table below.

Table 2: Extent of Land Insured by Type of Risk

Extent of paddy land insured	Mean	Std. Deviation
Extent of land insured for flood (acs)	2.78	1.91
Extent of land insured for drought (acs)	2.61	1.92
Extent of land insured for wild animals (acs)	2.14	1.52

Source: Field survey data, 2014

Most of the cultivated paddy lands (average of 3.76 acres) had been insured against flood damage. The lands insured against attacks by wild animals, especially elephants and pigs, were less than those insured for drought and flood. The number of times paddy lands had been affected by flood and drought in both Yala and Maha seasons during the past 10-15 years was analyzed. It was found that drought and floods were the major risks against which crop insurance cover

was obtained by farmers. Data revealed that only about 36% of the land cultivated is insured during both seasons.

About 34.1% of the paddy farmers were affected once, 37.7% of the farmers twice, by floods during Maha season. Hence more than 92% of the farmers had been affected at least once by floods in Maha. About 75.2% of the paddy farmers were affected once, 22.1% twice, and 2.7% of the paddy farmers affected 4 times by drought during Maha season. Drought affected about 50% of the farmers once, 40% twice, and 10% thrice during the Yala season.

Knowledge about Crop Insurance

About 88% of the paddy farmers had some knowledge of crop insurance and only 12% did not have any knowledge about crop insurance. Thus awareness and knowledge about crop insurance in the study area was high. About 68.7% of the paddy farmers had been exposed to awareness programs on crop insurance.

The results of the Chi-Square analysis of the association between knowledge about crop insurance and socio-economic traits of farmers indicated that educational level and obtaining loans from banks were the factors that had persuaded farmers to adopt crop insurance. The requirement that crops be insured was the major factor that persuaded farmers to adopt crop insurance, rather than the need to reduce risk (risk averse) encountered in paddy production due to droughts and floods. It was observed that 80% of the farmers who had adopted paddy insurance were from areas that had a high level of risk to natural disasters (floods or drought).

Regression results indicated that the extent of paddy land cultivated ($P<0.01$), type of farmer ($P<0.1$), crop insurance premium rate ($P<0.1$) and extent of land owned ($P<0.01$) had a significant impact on the extent of paddy land insured against risks during both Maha and Yala seasons. Thus it was evident that participation in crop insurance was significantly affected by the extent of land owned,

rates of insurance premium, extent of land cultivated and whether the farmer in question worked full-time or part-time.

Table 3: Association between Knowledge of Crop Insurance and Some Socio-Economic Traits

Traits	Pearson Chi-Square	Likelihood Ratio	Fisher's Exact Test
1. Age of farmer	4.372	4.318	1.450
2. Educational level	6.418**	5.191*	4.027**
3. Extent of paddy cultivated	1.216	1.147	0.511
4. Obtain credit/loan-Banks	9.780***	12.294***	9.715***

*Significant level= *** P<0.01, ** P<0.05, * P<0.10*

Table 4: Regression Analysis Results –Factors Affecting Adoption of Crop Insurance

Variables	Coefficients		T values
	B	Std. Error	
(Constant)	-0.428	1.189	-0.360
Extent of own land (acs)	0.375	0.047	7.898***
Age of farmer (years)	0.007	0.010	0.644
Educational level (years-schooling)	0.030	0.041	0.740
Exposed to awareness program	-0.287	0.248	-1.158
Type of farmer	0.540	0.315	1.714*
Premium rate(Rs/ac)	0.001	0.000	1.819*
Extent of paddy land cultivated acs)	0.266	0.067	3.966***
Crop insurance bound to Bank loan	0.315	0.379	0.832

a Dependent Variable: Total extent of paddy land insured

CONCLUSIONS AND POLICY IMPLICATIONS

It was evident from the study that only a small proportion of the paddy lands cultivated are protected by crop insurance against risks such as floods and drought which are very frequent in the area. Also only educated farmers who had awareness of crop insurance and had obtained loans from Banks adopted crop insurance to cover their crops against risks. Hence it is essential to create awareness about crop insurance among all farmers to increase participation and to enhance risk pooling of farmers to make crop insurance a viable scheme.

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