



CLIMATE INSURANCE FOR DRY ZONE FARMERS IN SRI LANKA

Dry zone agriculture in Sri Lanka is found to be highly vulnerable to the impacts of climate change. Variations in the rainfall pattern and the incidents of droughts and floods have been more frequent recently. Rain-fed farmers are particularly at risk of changing rainfall. Climate risks bring in additional challenges to dry zone agriculture.

Given the increasing risks and uncertainties due to climate change, it is important to understand the risk management strategies of farmers in facing the climate related risks and uncertainties. Among others, climate insurance has increasingly been discussed as a risk management strategy. Thus it is interesting to assess climate insurance as a risk management strategy for dry zone farmers in Sri Lanka.

Study Approach

Study District: Anuradhapura district was selected since it is a major agricultural district located in the dry zone. Specific study sites within the district were selected considering the source of water for agriculture namely – rain-fed, minor irrigation tanks and major irrigation tanks. Study covers 13 out of 22 divisional secretariat divisions in the district.

Sample includes 743 farmers. A survey of farmers was carried out using a pre-tested structured questionnaire. Sample was stratified equally based on the source of water – which serves as an indicator of vulnerability to climate risks. Focus group discussions and key informant interviews were also conducted before and after the survey.

Disaster experience

Over two third of the interviewed households has faced one or more natural disasters over the last five years. Highest number of households has faced disasters in 2014. Many regions in the study area witnessed unexpected increase in rainfall

during the year. Heavy rains had continued over a long period. Some farmers planted twice since seeds were washed away during the first planting. Towards the end of the season, farmer’s crops had been damaged before they were harvested. It was also revealed that 2013 was a dry year where they experienced a lack of rainfall, indicating high level of rainfall variability.

Risks and Uncertainties

Risk/Uncertainty	Percentage of Respondent Farmers
Climate related disasters	65
Rainfall uncertainties	54
Price risks	53
Fluctuations in water availability in village tanks	41
Getting irrigation water on time	38
Wild elephant attacks	36
Difficulties in selling due to quality issues in the harvest	34
Other wild animal attacks	29
Fluctuations in water availability in agro wells	28
Pest and disease attacks	23

Risk Management Strategies

Borrowing is the most commonly adopted coping strategy. Under that, pawning jewelry was the mostly observed strategy - nearly half of the surveyed farmers pawn jewelries. Around 8 percent of households work as laborers in agricultural activities. Agriculture labor is also not possible during widespread disasters such as floods. Around 7 percent of households obtain loans for agricultural purposes and another 7 percent sell paddy stocks allocated for consumption of household members. Agricultural insurance is not viewed as a significant risk management strategy by the respondents.

Farmers highlighted that they face a cyclic pattern of borrowing in the beginning and repaying them at the end of the season. This is a notable feature in every study location. Repayment is a big problem that farmers

Risk Management Strategy	Percentage of Respondent Farmers
Borrowing	
(a) Pawning jewelries	47
(b) Agricultural loans from formal banks	07
(c) Agricultural loans from CBOs	04
(d) Agricultural loans from NGOs	01
(e) Agricultural loans from informal sources	03
Working as labourers	
(a) Agricultural activities	08
(b) Non-agricultural activities	02
Selling paddy allocated for household consumption	06
Selling vehicles (motorbikes etc)	01
Other income generating activities	01
Investing money	01
Agricultural insurance	01
Outmigration seeking employment	01

Key Findings

Climate risks take a prominent place among the overall risks and uncertainties faced by dry zone farmers.

The most common risk management strategy adopted by dry zone farmers is borrowing – either from formal or informal sources.

Climate/Crop Insurance is not listed as a major risk management strategy of dry zone farmers.

Lack of trust, lack of education and awareness on the potential role of climate insurance are recorded as major reasons for lack of demand for climate insurance.

Farmers perceive that climate insurance can help farmers to complement other risk management strategies - particularly agricultural borrowings - if the above issues are addressed.

Index-based climate insurance can be seen as a technically feasible and acceptable option to overcome the issues in indemnity-based insurance in Sri Lanka.

face when they lose their agricultural income following climate related impacts. Therefore, farmers are faced with a vicious cycle of debts. Climate insurance is a good mechanism to address the issues in regard to repayment following a climate related disaster and break the vicious cycle.

Crop Insurance in Sri Lanka

According to the Central Bank Annual Report 2015, the voluntary crop insurance programmes covered only less than 4% of the paddy-cultivated area (on average) during 2003-2015. Lack of trust, lack of education and awareness are major issues for this. In most of the cases, crop insurance is obtained as a requirement in getting agricultural loans. The compulsory crop insurance programme introduced in 2013 by the government, which was bundled with the fertilizer subsidy programme covered 72 and 90 per cent of paddy cultivated area during 2014/15 Maha and 2015 Yala, respectively.

Opportunities for Index-based Climate Insurance

As per the farmer's experience in regard to bad years in the past and the compatibility of such information with historic data there is a technical feasibility in implementing index based climate insurance in Sri Lanka.

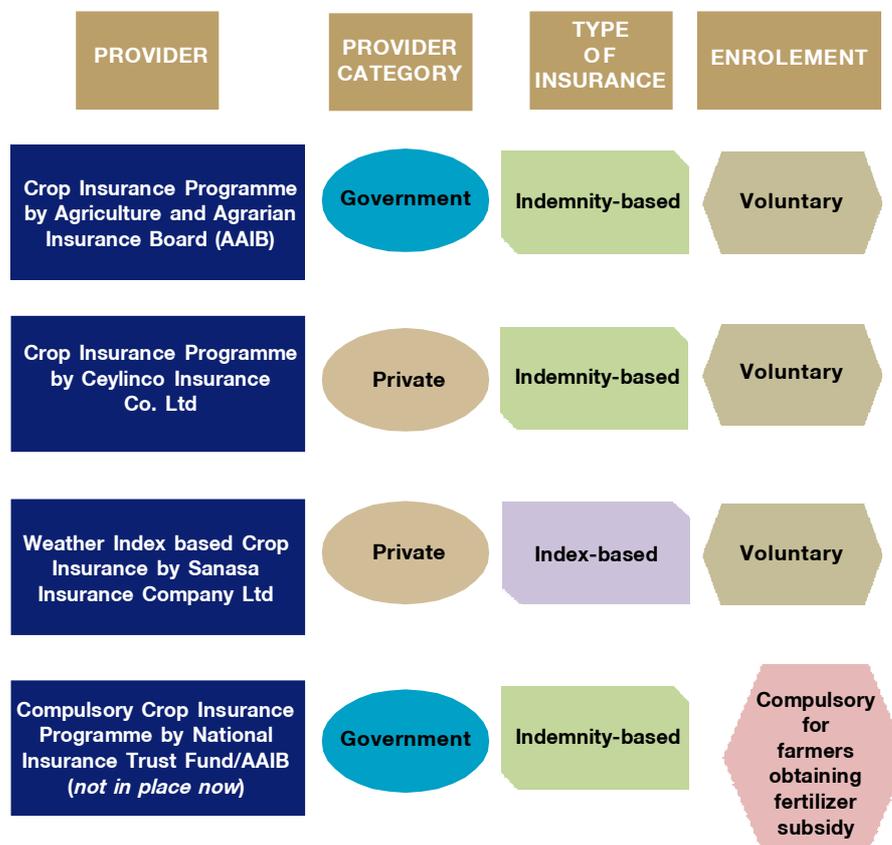
Index-based climate insurance when introduced with a proper education and awareness component has the ability to overcome issues in related to available indemnity-based insurance. This also calls for the need to establish adequate number of rain gauge stations to minimize basis risk. Additionally, it is important to have to a long historical record of reliable rainfall data – which is available for certain locations in Sri Lanka.

Climate insurance can complement the other risk management strategies, specifically borrowings from formal and informal sources. A fully subsidized pilot index-insurance introduced in Batticaloa district shows the need for proper farmer education, trust building and implementation of rain gauge stations specifically for index-based insurance.

Impacts of Floods and Droughts	Percentage of Respondent Farmers
Cultivation destroyed before harvesting	40
Post-harvest losses due to disasters	24
Reduced quality in the harvest	22
Transport issues	22
Difficulties in repaying loans	11
Problems in marketing the produce	14

Reasons for Not Buying Climate Insurance	
Lack of education and awareness on insurance	34%
Not required due to small scale of farming operations	31%
Lack of trust	23%
Not approached by insurance providers	18%
We do not require, as we are small scale farmers	31%
Bad experience of fellow farmers	06%

Crop Insurance in Sri Lanka



Indemnity-based Insurance Vs. Index-based Insurance

Indemnity insurance is based on direct measurement of damage suffered by the farmer. In contrast, index-based insurance relies on an objective parameter (rainfall for instance) which is closely correlated with crop yield. When compared with indemnity-based insurance, index-based insurance is characterized with higher level of trust, lack of adverse selection and moral hazard, ability to address covariate risks (such as droughts and floods), low costs and timely payouts.

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