

Agriculture Insurance for Sustainable Development in Sri Lanka: Evidence from Kurunegala District

Nilwala, W. M.,

Wayamba University of Sri Lanka, Sri Lanka

waruninilwala@gmail.com

Jayarathna, R. S. L.,

Wayamba University of Sri Lanka, Sri Lanka

Saumya.lakmi@ymail.com

Abstract

Going green mainly focus on the reducing the pollution and practicing the recycling that can lead to more environmentally friendly and ecologically responsible decisions and lifestyles to protect current and future generations. Since it leads to create a sustainable earth for each and every one, paying attention to the concept is very much needed in the present world. Therefore it is important to encourage the agriculture sector within a country. The objective of this study is to identify the current level of awareness of Agriculture insurance among farmers and how agriculture insurance that can inspire the farmers to boost their agro-products for sustainability. Even though agriculture played a vital role in the overall Sri Lankan economy in past, presently agriculture contributes only 7% to the Gross Domestic Product. Agriculture is subject to various risk and uncertainties in both production and income levels. Therefore it is essential to promote an effective risk management mechanism for farmers. Agriculture insurance is one of a solution the best solution to minimize those risk and uncertainties by providing financial protection against loss and damages. A survey conducted with interviewing 42 farmers in selected areas in Kurunegala district shown that the demand for agricultural insurance scheme is considerably low and more than 36% of farmers were not aware of agricultural insurance while another 26% of farmers had doubts regarding the process of agricultural insurance. Further, they stressed that they do not have a clear understanding of the real benefits of such insurance for small farmers like them. Even though Sri Lanka was the first developing country in Asia that launched an all-risk insurance of paddy crop, the survey shows that agriculture insurance should promote by enhancing the awareness of the benefits to assure the farmers. Also, it leads to support not only the short-term agro products but also long-term agro products such as rubber since several studies have indicated that, natural rubber plants are good sink for atmospheric carbon dioxide. Further, it is suggested to promote agriculture by implementing innovative agricultural insurance products. This study opens up avenues to develop agriculture for sustainable development while promoting agriculture insurance in Sri Lanka.

Keywords: Agriculture, Agriculture Insurance, Sustainability

INTRODUCTION

Agricultural production faces many of risks. Nevertheless, two major risks are of concern to the agricultural sector one is price risk caused by potential volatility in prices and production risk resulting from uncertainty about the levels of production those primary producers can achieve from their current activities. There are some kind of risks that arise in the production process which are beyond the control of the farmers. The agro-environmental problems are more pervasive in developing countries. Rapid deforestation, excessive soil erosion, land degradation, loss of biological diversity, watershed degradation, contamination of water, and overgrazing are some of common agro-

environmental problems in most parts of the developing world (Panayotou, 1993). Therefore, there is a need to have a way of taking care of the ever-changing weather, diseases and pests as well as price fluctuations. Agriculture insurance is a tool that will address the risks.

In general, insurance is a form of risk management used to hedge against a contingent losses. Transfer of a risk of loss from one entity to another in exchange for a premium or a guaranteed and quantifiable small loss to prevent a large and possibly devastating loss is the way of operating the insurance. Agricultural insurance is a special line of property insurance applied to agricultural firms in some other part of the world. In recognition of the specialized nature of this type of insurance, insurance companies operating in the market either have dedicated agribusiness units or outsource the underwriting to agencies that specialize in it. Agricultural insurance is not limited to crop insurance, it also applies to livestock, bloodstock, forestry, aquaculture, and greenhouses. Sri Lanka became the first country outside Japan in South East Asia to adopt agricultural insurance for crop losses resulting floods, droughts, pestilences, diseases or damage by wild animals. Objectives of crop insurance are stabilize farmers' income by reducing adverse effects resulting from substantial crop losses due to natural hazards and encourage the farmers to adopt improved technologies which can help to increased production and more efficient use of resources.

The Principles of returning farmers to the center of policy decisions are fundamental to the sustainable development. Governments, businesses, scientists and civil society groups must focus attention on the source of food security, re-planting and protect nature. All these groups must work together to enable the thousands of farm families to grow more crops sustainably through effective markets, more collaborative research and committed knowledge sharing.

A broad-based, knowledge-centered approach to agricultural development is needed. The approach starts with focusing on farmers and the tools and information they need to acquire land, grow crops, bring in their harvest and then get it to market. New investments, incentives and innovations are needed to achieve greater sustainability while delivering increased agricultural production. These benefits must be made available to all farmers, recognizing their role as guardians of shared environment, biodiversity, and ecosystems. There is a need for a shift in thinking which places the farmer at the center of sound and sustainable agricultural practices. This approach delivering productivity and sustainability must also lead to a more equitable and efficient production system. To succeed, any new approach must be based on a stable policy environment within which farmers can work and invest. This in turn requires us to establish stable, long-term policy and regulatory frameworks for the development of agriculture insurance to enrich the agriculture sector in Sri Lanka. By taking international assistance to develop the agricultural sector while promoting and taken their risk through an agricultural insurance will be highly appreciated by farmers.

BACKGROUND OF THE STUDY

There are three major economic activities which contribute to the Gross National Product (GNP) in Sri Lanka, namely Agriculture sector, Industrial sector and Service sector. Beginning of 1950s Sri Lankan economy was mainly based on agricultural sector and by mid-1950, service sector contribution remarkably increases and maintained the highest contribution to the GNP at present. Even though Agriculture is the most important sector of the Sri Lankan economy in past its contribution to the gross domestic product declined substantially during the past 3 decades as 30 percent in 1970 and 7.5 percent in 2017(Annual Report of Central Bank, 2017).

Agriculture is the systematic raising of useful plants and livestock under the management of man (Rimando, 2004). Basically Sri Lankan agriculture sector focuses on tea, coconut, spicy, rubber for export and paddy, vegetables and crops for consumption within the country. With the change of political and security situation of the country, it is essential to develop agriculture sector to achieve the self-sustainability of the country.

Sri Lanka frequently suffers from natural disasters, among which water-induced disasters such as floods, droughts and landslides are the most common and destructive types (Disaster management center, 2010). Currently, Sri Lankan farmers can insure most of their crops through the conventional crop insurance schemes conducted by the government-owned Agricultural and Agrarian Insurance Board (AAIB). The Crop Insurance Board was established under the Parliamentary Act No. 27 of 1973 to operate a comprehensive agricultural insurance scheme for the benefit of the farmers in respect of rice, other field crops, and livestock. Since 1974, the scheme has been funded with finances from the government consolidated fund and also under self-finance schemes. It was brought within a broader framework by the Agricultural and Agrarian Insurance Board Act No 20 of 1999 which came into effect from August 16, 1999, with a view to establishing the scheme on a self-financing basis.

Although AAIB has been operating for more than five decades, voluntary participation has drastically decreased. AAIB, which directly contributes to the economic development of the country, has introduced various insurance schemes and the background has been prepared for the preparation of new insurance schemes for the new market requirements. It is the level of penetration among potential clients is currently less than 5 percent. Among the main causes for low confidence in this scheme is the lack of transparency in loss assessment and underestimation of indemnity payments (Rambukwella et.al, 2007).

Government schemes are not based on actuarial principles and are deemed unsustainable. Agricultural and Agrarian Insurance Board in Sri Lanka is conducting basic insurance products of Crop insurance,

Livestock insurance, Tractor and agricultural equipment insurance, an Insurance scheme for private paddy and warehouses, Health insurance, the Accidental insurance scheme for farmers. Under the Crop insurance, four insurance schemes were introduced. Paddy cultivation insurance introduced to minimize the risk associated with paddy cultivation. Further Vegetable cultivation insurance has been introduced with the intention of encouraging vegetable farmers by adding various methods to suit the market requirements. Also, Maize cultivation insurance has been implemented with the aim of ensuring farmers' economic security covering the occasional damages caused to maize cultivators. These coatings also apply to varieties that are referred to by the Department of Agriculture. Other than that they have insurance scheme for other agriculture insurance schemes as Floriculture insurance, Coconut Growing Insurance, Tea Cultivation Insurance, Sugar crop insurance, Potato cultivation insurance, Chilly Cultivation Insurance, and Big onions Cultivation Insurance.

LITERATURE REVIEW

Sri Lanka's agricultural insurance scheme was initiated in the 1958 maha season, on a pilot project basis with approximately 26,000 acres of paddy in five districts. By 1974, nearly 16 percent of the total area cultivated with paddy had come under insurance in both seasons (Sandaratne, N, 1974). Agricultural insurance is one of strategies to tackle the problem of risks in farming. The poor paddy farmers in the country is caught in the vicious cycle of poverty, limited resources, and low inputs for production and limited output (Heenkenda, 2012).

Insurance gives the farmers greater confidence in venturing upon new and improved farming practices and in making greater investments in agriculture to improve crop yields and increase agricultural production (Ray, P.K., 1967). Insured areas represent a small proportion of total paddy area, and farmers do not tend to insure crops and animals they do not perceive as risky. Farmer apathy toward insurance schemes may be due to inadequate indemnity payments, delays in payments, difficulties in filing claims, among others (Rambukwella et al, 2007).

According to the Rambukwella et al (2007) identified several problems faced by farmers as inefficiency of the officers attached to the agricultural insurance programme, delays involved in the assessment of damages at the initial stage, hold up the re-cultivation process, farming activities could not be done according to the conditions of the agreement, minor damages were not taken into account, interest of bank loans increased due to the delays in indemnity payments, no direct linkage between the farmers and the insurance company, difficulty to obtain indemnities for damages by wild animals, estimation is done during the harvesting period, irrespective of the stage of the crop damages and application form for the insurance claim is difficult for the farmers to comprehend.

Further Rambukwella et al (2007) make many suggestions as when entering into an insurance agreement the farmers should be given all the details about crop damages and the payment of indemnities, activities must conform to the conditions of the insurance agreement, the farmers should get feedback regarding the process of indemnification after the loss assessment, the farmer must participate in the loss assessment process, loss assessment of the primary stage damage should be expedited, the Insurance Officers should be called upon to discharge their responsibilities duly, indemnity should be paid to settle the crop loan in case of total crop failure, extra benefits or bonus schemes should be introduced to regular farmers and they should be educated about such benefits, the amount of insurance coverage should be increased, there should be a good relationship between the farmers and the field officers, indemnity given to crop damages must be increased and the farmers should have the opportunity for direct dealings with the insurance institutions.

METHODOLOGY

Sri Lanka is divided into three major climatological zones where Kurunegala District falls partly in the dry zone and partly in the intermediate zone and uncertainties that the farmer could face in the producing or after production. As per the details provided by the Department of census and statistics, Kurunegala District is one of the leading districts which is involving agriculture activities. Therefore population of the present study was the farmers in the Kurunegala district. According to Malterud et al (2015) the concept of "information power" guides adequate sample size for this kind of interviews and information power indicates that the more information the sample holds, relevant for the actual study, the lower amount of participants are needed. Based on that, researcher selected 42 farmers in Kurunegala District as the sample for this study. The sample was taken randomly using simple random sampling technique.

Both primary data and secondary data were used for the study. The study involved the collection of primary data using interview method in order to answer questions regarding awareness of agriculture insurance among selected farmers. The data collection tool was an unstructured interview with open-ended questions which was more like a guided conversation than a strict structured interview. Since these interviews are more flexible as questions can be changed depending on the respondents' answers and allows the respondent to talk in some depth, choosing their own words, it helps the researcher to develop a real sense of a farmers' understanding on awareness of agriculture insurance facilities. By doing unstructured interviews the researcher could able to ensure that the questions were not misunderstood by the farmers and the risk of collecting incomplete information was minimized.

Even though the majority of questions were unstructured, the researcher wanted to gather information as much as possible, the researcher had predetermined questions grouped together to address the objective of the study. Case by case supplementary questions were asked by the researcher and sometimes omitted or change the questions. For some questions, the researcher used a Likert scale to measure the perception and attitude of the respondents regarding agriculture insurance. Questions on demographic variables such as gender, age, education level, and marital status were structured. This method allowed more freedom in recording responses and the effort was made to create a friendly atmosphere of trust and confidence among farmers so that the respondents felt at ease. The awareness of agriculture insurance was measured by asking several questions as knowledge of existing insurance schemes, benefits of agriculture insurances, channels of distribution, cost of agriculture insurance, the procedure for acquiring agriculture insurance etc. depending on the level of responsiveness among selected farmers.

FINDINGS

Data Analysis

This study analyzed 42 responses out of the 50 questionnaires administered which is 84 percent. Out of the 42, 37 of them were crop farmers and 05 were the stakeholders.

Demographic Data Analysis:

In this section, the researcher sought to collect information on the respondents' age, gender, highest academic qualification, members of the household and farming experience.

Table 1: Percentage Distribution of Respondents by Age

Age	Frequency	Percentage
27 years and below	2	5
28-37	4	10
38-47	11	26
48-57	16	38
58 and above	9	21
Total	42	100

The findings on Table 1 show that 38% of the respondents were aged between 48-57 years. It was also found that 26% of the respondents were aged between 38-47 years, 21% were above 58 years. 28-37 years 10% and 5% of 27 years and below. According to Torkamin (2002) age has an influence in the adoption of agriculture insurance.

Table 2: Percentage Distribution of Respondents by Gender

Gender	Frequency	Percentage
Male	36	81
Female	6	19
Total	42	100

Table 2 shows that 6 (19%) of the respondents were female while 36 (81%) were male. This is an indication that most of the farmers interviewed were males.

Table 3: Distribution of the Respondents by Farming Experience

Farming Experience	Frequency	Percentage
5 Years and below	2	5
6-10 Years	4	10
11-20 Years	7	17
21-30 Years	8	19
31-40 Years	12	29
41-50 years	7	17
Over 50 years	25	
Total	42	100

Table 3 shows that 12 (29%) of the respondents had 31 years – 40 years farming experience and 8 (19%) respondents had 21 years – 30 years of farming experience. According to the collected data, most of the respondents had 10 years – 50 years of farming experience. This is an indication that most of the farmers interviewed were more experienced farmers.

Influence of Awareness on the use of Agriculture Insurance:

To find out the influence of awareness of the use of agriculture insurance, the study assessed whether the respondents had heard of agriculture insurance, the source of information on agriculture insurance, organizations offering agriculture insurance, having insured crops or livestock, the motivation for insurance and the benefits of agriculture insurance.

Having Heard of Agriculture Insurance:

On whether the respondents had heard of agriculture insurance, the respondents were asked to indicate whether they had heard of insurance or not and it is presented in Table 4.

Table 4: Having Heard of Agriculture Insurance

Hearing of Agriculture Insurance	Frequency	Percent
Well aware	11	26.01
Not clear	16	37.11
Not aware	15	36.88
Total	42	100

According to the table 4, 26.01 % of the respondents interviewed had heard of agriculture insurance while 36.88 % had never heard of it and 37.11% of highest respondent are not clear about the agriculture insurance process. The finding is an indication that most of the respondents had not clear idea about the agriculture insurance. According to Baker (2000), farmers' awareness of the importance of insurance and its influences on their incomes support the uptake of agriculture insurance.

CONCLUSION AND RECOMMENDATIONS

Agriculture is a sector of an economy where uncertainty due to natural hazards has a major effect on decision making. A key role played by insurance program is the indemnification of risk-averse individuals who might be adversely affected by natural probabilistic phenomena. Insurance, by offering the possibility of shifting risks, enables individuals to engage in risky activities which they would not otherwise undertake. Unlike other sectors, agricultural insurance is rarely provided by the market. Even in advanced market economies, all-risk crop insurance is offered only by public agencies. In developing countries, where the risk-bearing capacity of farmers is even lower, no such mechanism usually exists. Insurance, by offering the possibility of shifting risks enables individuals to engage in risky activities which they would not otherwise undertake.

As agriculture insurance is a means of protecting the agriculturist against financial losses due to uncertainties that may arise from named or all unforeseen perils beyond their control, it is one method by which farmers can stabilize farm income and investment and guard against the disastrous effect of losses due to natural hazards or low market prices. Agriculture insurance not only stabilizes the farm income but also helps the farmers to initiate production activity after a bad agriculture year. It cushions the shock of agriculture losses by providing farmers with a minimum amount of protection. It spreads the agriculture losses over space and time and helps farmers make more investments in agriculture.

Putting the issue of premium cost aside, there is a general expectation that the Government will come forward to rescue in the consequences of any disaster.

However, agriculture insurance should be part of the overall risk management strategy. Insurance comes towards the end of risk management process and it is a redistribution of the cost of losses of few among many, and cannot prevent economic loss. Safeguard natural resources is a must for sustainable development and therefore for the safeguard of natural resources agriculture insurance is necessary. While much of the knowledge needed to improve global agriculture already exists, including within remote communities, it often does not reach those farmers that could benefit most. Therefore increase the level of education on crop and natural resource management for farmers, promote the development of village-based knowledge centers, provide access to scalable information technologies for farmers to receive weather, crop, and market alerts, as well as other early warning systems to help them make the right decisions for sustainability and productivity can be introduced to promote sustainable development through farmers. Even though there is an increased complexity and variation in agriculture risk and very difficult in making rational decisions when faced with those risks, the survey showed that farmers were not aware regarding agriculture insurance as one of the best solution that they can use to face those kinds of risks.

Improve access to agricultural inputs and services including mechanical tools, seeds, fertilizers, and crop protection materials are also needed to promote agriculture. Moreover encouraging and coordinate various local players to ensure information regarding agriculture insurance get into farmers' hands and risk management tools to support farmers in managing weather and market variations are vital.

Farmers have lost confidence in the agriculture insurance scheme and their participation has also dropped drastically. Even though smaller farmers have more interest in the agriculture insurance than the larger farmers. However, farmers are dissatisfied with the agriculture insurance scheme due to the insufficient indemnities compared with the cost of production or amount of damage, and the time lapse in indemnity payments. At the time of indemnity, there is a no transparency in loss calculation and it creates frustration among the farmers due to underestimating of the losses. As a result of that, the farmers considered agriculture insurance its extra burden on them. Therefore in there is a less no of farmers have participated in the agriculture insurance. On the other hand, less demand effect to the government administration cost. Because government always allocated funds for the farmers and if they were not taken the claim or the coverage that government administrative expenses are high but less premium participatory of farmers is creating negative attitudes within the country.

Farmers are interested on pension and social security funds. Because they feel that they were secured after the age of sixty until death. Therefore previously government introduced the 'Suvasetha' health insurance scheme. But, the farmer pension scheme fund also hangs in the balance since the government grants were not forthcoming. Although the payment of pension has increased several times, the premium rates have remained unchanged since its inception. This also contributed to the lack of soundness. The premium rates of farmer pension and social security benefit scheme important to increased by a reasonable amount. They were expecting the protection through the agriculture insurance not only the crop losses but also their lives.

To develop the agriculture insurance policy and make interest to farmers depend on the awareness of agriculture insurance. Therefore AAIB has responsibility for the smooth functioning of a workable agricultural insurance scheme by concerned with the immediate supervision which who has well aware of assessment of agricultural damages and timely payments of indemnities. Its make farmers satisfaction because they are known they have protection to stand once again against the risk also their protection.

Therefore to overcome the time lapse of indemnity payment, the administrative structure of claim payments must be decentralized so that indemnity payments could be accelerated through its existing branch office network over the island. Therefore establishing the branches or the facilitating the loss assessor for regional wise will be more effective than current situation to estimated loss accurately and timely and avoid the time lapse of indemnity.

The agriculture insurance coverage of crop insurance scheme needs to be increased to at least two-thirds of the cost of cultivation and it should be changed periodically depending on the changes in the cost of production. There should be a strong foundation for the agriculture insurance without political intervention that will be a encourage for all farmers to enter into the insurance scheme. Crop insurance is compulsory for when taken the crop loans. They were taken their protection due to fear of acceptance of loan not to the real risk protection.

Currently, we haven't the uploaded data for the natural perils and other covered peril under the agriculture insurance. Therefore it is difficult to move for a reinsurance system. A proper computerized database must be updated and continuous attention should be given to the assessment of loss in a standard way. Insuring groups of farmers, village wise or group of farmers by crop categories can reduce administration costs for small-scale farmers and it will help to encourage the farmers to organize themselves to insurance mutually and such a course of action will accrue benefits both for the insured and the insuring agency. Also, it leads to mutual understanding and having built trust and the support within the group.

The increase of the agriculture insurance awareness may lead to increase the risk takers for farming and as a result of that cultivated lands and employability in agriculture sector will be increased. Therefore increasing the awareness of agriculture insurance will be a more effective strategy to promote agriculture sector in the country and as a result of that green environment will exist for the sustainability. On the other hand encourage to use the organic methods for farming is a more operative way for the earth and it helps to mitigate the global warming as well. Also, the development of agriculture sector may support for the young generation to enter the agriculture by thinking it as not a new challenge. In our country many young people believe that there is no future in farming, yet quite the opposite is true. If having a clear mechanism for encouraging the agriculture sector through agriculture insurance it's a warrant to increase the agriculture sector by participating the young participatory as well.

Agriculture insurance is offered not only for crop insurance but also other agro products. Rubber is one of the important cash crops cultivated in Sri Lanka. Because rubber plants improve air quality by converting exhaled carbon dioxide into breathable oxygen, air including contaminants is absorbed through the rubber plant's leaves. Contaminants are drawn through the plant with the air and deposited in the soil. Once the contaminants are in the soil, they encounter microbes that naturally live around the roots. But currently Sri Lanka hasn't any insurance scheme for the rubber. The importance of developing agriculture insurance leads to sustainable agriculture has to play the important role in preserving natural resources, reducing greenhouse gas emissions, halting biodiversity loss and caring for valued landscapes. Because agriculture has a twin role in adapting and mitigating climate change, agricultural systems worldwide are faced challenges of climate change and other natural threats. When using the clear mechanism for the development of agriculture people can consume the healthy and high-quality foods. Also the natural resources of water, soil and air are kept in good condition for future generations.

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