

# Determinants of Using Crop Insurance among Small-Scale Sugarcane Farmers in Eswatini

Ajay S. Singh<sup>1\*</sup>, Douglas Kibirige<sup>2</sup>, Makhosazane J. Dlamini<sup>3</sup>

<sup>1,2,3</sup>Department of AEM, Faculty of Agriculture, University of Eswatini, Luyengo M205, Eswatini (Swaziland)

\* Corresponding Author: [asingh@uniswa.sz](mailto:asingh@uniswa.sz), Tel. 00268+ 25170594

Available online at: [www.isroset.org](http://www.isroset.org)

Received: 14/Apr/2022, Accepted: 15/May/2022, Online: 30/Jun/2022

**Abstract-** Agriculture is a primary source of income generation and also provides a means of other investment opportunities in Eswatini. In Eswatini, farmers are still facing a magnitude of production risks including climate change and other natural hazards. While suggested that risk coping mechanism like crop insurance has the potential to unlock the potential to enhance farm productivity, uptake of crop insurance is very low among smallholder sugarcane farmers. This research explored factors influencing the uptake of crop insurance by smallholder sugarcane farmers in Lubombo region of Eswatini. The objectives of the study were to determine the socio-demographic characteristic of the sugarcane farmers, to determine awareness and willingness to insure sugarcane farms and also determine farmers's attitudes and perceptions towards adopting crop insurance. Primary information was gathered using self structured, well-defined, and validated questionnaires through face to face interviews. The study revealed that only 54.3% of the respondents had knowledge about crop insurance. The results further indicate that female farmers who are educated and own title deed land are more likely to insure their sugarcane production. Therefore the study recommends that insurance organizations offering crop insurance and extension workers need to intensify the campaign of crop insurance especially among the male sugarcane farmers who have attained less formal education and mostly farm on Swazi-Nation Land.

**Keywords-** Crop Insurance, Small-Scale Sugarcane Farmers, Perils, Premiums, Eswatini (Swaziland)

## I. INTRODUCTION

Agriculture is a primary sector in the economy of Eswatini, serving as the main driver for growth, food security and poverty reduction. Agriculture contributes approximately 15% of the national Gross Domestic Product (GDP) and it is the largest employment sector in the rural Eswatini. According to Agricultural Organization, agricultural production should be boosted to improve rural living standards and to satisfy the demand for raw agricultural materials by the urban population. According to Thompson (2007), the agriculture sector engages 75% of the population [1]. Generally, the agriculture sector is divided into two groups, mainly the Swazi National Land (SNL) and the Title Deed Land (TDL). About 54% is of the land is Title land and 46% is Swazi Nation Land. Small-scale farming is the main contributor to the rural economies and to the community livelihoods.

The economy of Eswatini is largely based on agriculture making it prone to climatic changes. Crop production depends on many external factors such as climatic conditions, political, geographical and economic factors which introduce risk in the agricultural sector. Singh and Hlophe (2017) reported that the major risks confronted by the agricultural sector and their impact on growth and community welfare has drawn attention to the need of risk-management of these dangers by promoting innovations in

the agriculture field [2]. In response to uncertainty in agriculture various innovative products have been developed to protect farmers.

### Sugarcane industry in Eswatini

The sugarcane industry is the mainstay of Eswatini economy as it is the primary provider to the national agricultural output and employment. It contributes 18% to the Gross Domestic Product which is approximately 400million US\$ per year. Approximately, 16% of the total working population is directly employed, and about 80000 people depend of the employed personnel in the industry. Lastly, the sugar industry contributes about 60% the agricultural output. It is called the 'Swazi gold'. In Eswatini, the sugarcane industry is mainly composed of 3 contributors which are the Eswatini Sugar Association, the millers (Mhlume, Ubombo and Simunye), and the cane growers.

The Eswatini sugar industry is governed by the Eswatini Sugar Association as ordained by the constitutional act of 1967. Eswatini is the second highest producer of sugar in southern Africa. There are seven (7) main market areas where sugarcane is sold: SACU (Eswatini, Botswana, Lesotho, Namibia and South Africa), EU and United states.

### **Involvement of smallholder sugarcane farmers in Eswatini**

Small-scale farmers have also been involved in the sugar industry. According to Masuku (2011) smallholder farmers live on the Swazi Nation Land (SNL) and each farmer owns about 2ha to 5ha of land. He also stated that the SNL is the main landholding organization and is controlled by the king in trust of the Swazi national population [3]. The usage of this land is managed by the local leader, known as the chief, who gives the farmers the right to carry out the agricultural practices on a certain area of the communal lands. Hence, it is the primary land category available for the developments of the sugarcane industry. Procedures for obtaining consent control of the chief in whose areas it lies. He further noted that the smallholder farmers had minimal knowledge and skills on modern agriculture and commercialization because the government does not prioritize developing and training of smallholder farmers so that they can make reasonable profits not only for their households but for the economy at large. The main objective of small-scale sugarcane farms is to increase the household income to minimize poverty. It is a national policy that is efficient for the competitiveness of smallholder sugarcane. Small-scale sugarcane farming is carried out by 1140 farmers particularly living in poverty afflicted areas of the lowveld and middle veld [4].

Uncertainty of crop yields is one cause of concern farmers' face. According to Shashi and Umesh (2015), there are various factors that impact the farming output, and many of which are beyond the control of the farmer [5]. Smallholder farmers are frequently exposed to risks such as droughts, floods, diseases hailstorms and outbreak of fire which have a negative impact on the agricultural productivity of households whose livelihood depend on agricultural farming. Farmers confront many risks due to changing climatic conditions, pests and diseases, and price fluctuation. According to Mhazo et al. (2010), climate change in Eswatini has become more pronounced, and leads to extreme weather conditions, for example, droughts, hailstorms and flash floods [6]. The worst drought was experienced in the country during 2004/2005 with the worst year being 2015. The years ranging from 1984 to 2000 experienced extreme floods. Strategies such as crop insurance are suitable tools for transferring risk to the third party. Crop insurance may be bought by agricultural producers, and can be subsidized by the federal government, to protect against agricultural loss due to natural disasters. Kumar (2011) stated that crop insurance is a rudimentary instrument for maintaining stability in farm income and promoting investment [7]. Kumar (2011) also analyzed the farmer's perception and awareness toward crop insurance for risk management [7]. Another research by the National Surveys Data 2018 suggests that the low uptake of crop insurance is attributed by the inconsistency and low levels of income. This research seeks to identify factors influencing uptake of crop insurance decisions by smallholder sugarcane as a risk management tool. It seeks to provide an understanding of

farm households needs for crop insurance and searches the best ways of protecting farmer's livelihood from agricultural risks. On another note this study aims to familiarize smallholder sugarcane farmers with the benefits the uptake of crop insurance because the farmers need to be aware and have a clear understanding of crop insurance. The primary objective of this paper is to determine factors influencing uptake of crop insurance by small-scale sugarcane farmers in Eswatini.

#### **Problem Statement:**

Uncertainty of crop yields is a primary cause of concern that farmers face. Small-scale farmers are frequently exposed to risks, such as droughts, floods, diseases, hailstorms, and outbreak of fire, which have a negative impact on the agricultural productivity of crops and livelihood of the farmers. Agricultural producers are facing many risks and challenges in their agricultural activities. Risk management approaches such as crop insurance are appropriate and important tools for risk mitigation. Crop insurance can be purchased by agricultural farmers, and subsidized by the government of Eswatini, to protect against loss of their crops due to natural disasters. Despite research efforts to enhance small-scale sugarcane farmers' access to formal insurance of their farms through innovative insurance products, evidence shows that the uptake of crop insurance is very low. This research pursues to identify the factors influencing uptake of crop insurance decisions by small-scale sugarcane as a risk management tool. It also seeks to provide an understanding of agricultural farm needs for crop insurance and searches the best ways of protecting farmer's livelihood from agricultural risks. On another note this study intends to familiarize small-scale sugarcane farmers with the advantages of crop insurance because the farmers need to be aware and have a clear understanding of crop insurance.

#### **Research Objectives:**

The main objective of the study was to determine the factors influencing the uptake of crop insurance by small-scale sugarcane farmers in Eswatini and the specific objectives are:

1. To determine awareness and willingness towards crop insurance among small-scale sugarcane farmers.
2. To investigate the factors influencing the uptake of crop insurance decisions by small-scale sugarcane farmers and also to determine farmer's attitudes and perceptions about crop insurance in small-scale sugarcane farming.

#### **Justification of the study**

The purpose of the main study was to identify the factors that have an impact on the uptake of crop insurance decisions by small-scale sugarcane farmers as a risk-management tool in Eswatini. The results will be useful to insurance companies that offer crop insurance covers to the farmers. It will also be helpful for small-scale sugarcane farmers who have not yet made the right choice of taking or using crop insurance schemes for their sugarcane farming land. It will also help the farmers to realize the importance of crop insurance as a risk

management tool. Smallholder farmers will also be able to acquire knowledge about the premiums that are offered by the insurance companies. Further it will help other smallholder farmers who are not in the sugar cane industry to take crop insurance for their agricultural production. The findings and recommendations of this study will be beneficial in the body of knowledge and researchers who will want to take further studies related to factors influencing the uptake of crop insurance by smallholder sugarcane farmers.

## II. LITERATURE REVIEW

### Sugarcane Production in Eswatini:

In Eswatini, the Sugar Industry Quota Board regulates the commercial sugarcane industry. It registers and provides a grower quota to all the commercial growers. A new farmer intending to join the industry has to require with the Board and acquire a license and a quota. The license safeguards the smooth running of the sugarcane industry operations such as the cane crushing, and the loading of the millers. The license also ensures that the necessary requirements, such as irrigation water, and land, of the grower are met, in line with the rules and legal requirements. Hence, the quota can be viewed as an arrangement between the miller organization and the farmer that the farmer will meet a certain requirement of sugarcane for the miller, and the miller will purchase the specific quantity of the sugarcane from the farmer. This is to ensure the optimum usage of the capacity of the millers and to prevent value-degradation of the farmer's sugarcane due to overproduction or delays in processing by the miller. Payment to the farmer is calculated using the quantity (weight) of sucrose delivered.

Marketing (Year)	Cane crushed (MT)	Sugar produced (MT)	Sugar/Cane Ratio (%)
2013/14	5,591,830	653,337	11.68
2014/15	5,639,193	686,778	12.18
2015/16	5,836,553	695,408	11.91
2016/17	4,973,571	587,004	11.80
2017/18	5,405,000	650,125	12.03
2018/19*	6,097,214	730,000	11.97
2019/20**	6,500,000	800,000	12.31

\* Source: Eswatini Sugar Association, Eswatini

\*\* Eswatini Association Cane Growers

### Risks in the agriculture sector:

**Production risk or yield risk:** The quality and quantity of agricultural output may be affected by uncertainties, such as changing weather patterns, pests, diseases, and quality of agricultural products such as fertilizers and seeds.

**Price or market risk:** Risk that is a result of market fluctuations in prices that the farmers receive for the output produced in relation to the costs incurred by the farmer for agricultural inputs.

**Financial risk:** It highlights the change in interest rates of the available credit that the farmer invests during the production process. It contributes to various risks such as loss of equity and insufficient liquidity.

**Institutional risk:** It covers the risks associated with the government interventions, such as dealing with subsidies, changing trade regulations of output, tax reforms, chemical usage and environmental laws.

**Human or personal risk:** It highlights the health and safety hazards associated with use of agricultural inputs such as pesticides, chemical fertilizers and heavy machinery.

**Production risk perils:** These risks can be categorized as insurable, and they include: hostile weather conditions, such as drought, excessive rain, flood, windstorm, frost, and hail, pests, and diseases.

### Definition of crop insurance:

The incomes of small-scale farmers are increasingly impacted by financial risks and natural conditions out of their control. Kumar (2011) defined Crop insurance as an instrument that help farmers cover crop losses due to agricultural risks which include drought, outbreak of pest and diseases, hail, windstorm and fire [7]. It is an instrument where a participant pays premiums and receives claims in cases of losses against insured hectares of property. Crop insurance schemes can compensate farmers in the event of agricultural losses through payment of premiums for coverage. Farmers receive payments after losses of insured crops and this gives them a peace of mind and a return of farm household income. Improvement in the risk-management sector of the agricultural industry increases the possibility of escalating productivity. Crop insurance has an important role to play in the long-term success of smallholder sugarcane farmers in maintaining their income level, increasing risk bearing ability resulting in improved crop yield and higher agricultural production. Insurance reduces the risk in farming and farmers will assume more financial risk freedom which is often termed as 'risk balancing'. Agriculture insurance is not limited to crop insurance but other covers are available which include livestock, fishery and forestry insurance.

### Types of crop insurance:

Crop insurance can be classified into two groups, indemnity-based and index-based insurance.

### Indemnity-based crop insurance:

It is based on the actual loss a farmer suffers and certifies that claim compensations are made relative to the loss. Careful scrutiny of the damages is carried out to calculate the equivalent compensation. The compensation is fixed equal to the production cost value which was insured prior to the loss. Single peril insurance covers against a specific preset peril, meanwhile, a multi-peril insurance covers all types of perils.

**Index-based crop insurance:**

In this type of insurance, compensations are relative to an "index" which is closely related to the losses. According to Mbonane (2018), an index can either exceed or be below a specified threshold, such as the amount of rainfall in the specified time period, which then regulates when compensation can be made. Index-based insurance is not intended to safeguard the farmers from every negative situation, but only in the cases where wide spread significantly affects farmers' livelihoods [8]. Area yield index and weather based index are examples of index based insurance.

**Importance of crop insurance**

According to Mbonane (2018), farmers use multitude of risk-management tools, such as the diversification of farm product [8]. Farmers who have an insight in crop insurance can be able to make calculated risks for their farms. Farmers can also take forward contracts at the beginning of a cropping season, which can limit risk against prices [9]. Risk awareness also helps decision making by the farmer since he will be aware of output or consequences of his move. Abebaw (2006) et al. argues that risk awareness plays a significant role in production and management behavior of farmers [10].

Farmers who have adopted crop insurance are said to be safer than those who have not. In case of droughts or outbreak of fire the insurance companies will payout indemnity payout to farmer who suffered crop loss and this is beneficial to the farmer. Small-scale farmers who have the ability to purchase crop insurance stand a chance to have the ability to pay-off their respective loan amounts even during the agricultural failure if they partner with recognized insurance companies [8]. The ability to adopt crop insurance to smallholder farmers provides protection of the economic interest of farmers against possible risk and promotes adoption of other new agricultural technologies.

Aidoo et al. (2014) stated that the crop insurance companies drive multiple campaigns to raise awareness among farmers regarding natural disasters [11]. The insurance markets work perfectly if the farmer had no control of the underlying risk, the insured farmer has rights to make necessary claims. Farmers can also manage market price risks by entering into detailed contracts at the beginning of agriculture season. [9]. It is important to understand the behavior of farmers as producers when faced with risk.

**Crop Insurance in Eswatini**

There are two insurance companies offering agricultural insurance in Eswatini. Lidwala Insurance Company was the trendsetter to introduce crop insurance policy in the country in year 2011. The company presented an insurance package which covered both, small and large commercial farming operations [12].

**Sugarcane Protection Policy:**

According to Msibi (2011), the sugarcane protection policy caters for all sugarcane farmers [12]. The policy contains a detailed section that provides cover against damages to the cane due to fire, storm drought and other natural causes. On the other hand, then Eswatini Royal Insurance Company has always been in existence and is the largest insurance company that offers agricultural insurance. The company offers two types of insurance products.

**Multi-Peril crop insurance:** This is a policy cover that cover crops in the event there is an occurrence of drought, fire, windstorm excessive rainfall and uncontrollable pests and diseases. In this product then farmer is given two options, to cover for total financing or total yield.

**Named peril Insurance:**

In this insurance product the farmer is covered for a specified peril and the policy does cover for crop failed if it is not the one specified in the cover.

Lidwala Eswatini Royal Insurance Company provides both crop insurance and livestock insurance. They provide insurance schemes for maize plantations, sugarcane farms and other crops against natural causes [13].

**Settlement of claim:**

The insurance scheme covers the production costs that were incurred by the farmers. The production costs or cost of inputs can be categorized under the following options:

- i.) Preparation of land – ploughing, tilling
- ii) Cost of plant material/seedling
- iii) Planting costs
- iv) Irrigation costs
- v) Manures and fertilizers
- vi) Pesticides and insecticides
- vii) Intercultural operation –weeding, thinning, mulching
- viii) Labor charges
- ix) Harvesting

**Risk management through insurance:**

Insurance has proven to be an effective weapon for risk-management. Once a risk is recognized and calculated, a farmer can use an insurance cover to safeguard his/her operations against setbacks or losses. The insurance-providing companies estimate the significance of the risk factors and estimate the required premiums to cover the risks. Hence, the premium will be higher for more prevalent risk factors [14].

**Study on factors persuading the uptake of crop insurance decisions by smallholder sugarcane farmers:****Age and education of the smallholder farmer:**

Education plays a key role in understanding the principle of insurance; especially, because insurance is not a means of increasing income but it provides a means of combatting risks faced by the farmers. Educated farmers

are more likely to adopt crop insurances because it is easier to communicate the terms and conditions of an insurance premium, and it is easier for the farmers to understand the concept of premiums and claims [15].

#### **Farm size:**

Kibirige and Singh (2021) indicated that small-scale sugarcane farmers often lack irrigation facilities; financial assets and credit, and technical advisory. Hence, they are more likely to suffer losses [16]. Therefore, the study suggests that insurance could be one possible way to mitigate the loss. It has been observed that the size of the farm is proportionally related to the probability of insurance; hence, a farmer with a bigger the farm size is more likely to opt for an insurance cover. A decision to increase the agriculture investment by a farmer increases the chance that small-scale farmers choose credit source which also provides insurance cover. Nair (2010) also stated in his findings that 60% farmers who use crop insurance are small-scale and medium-scale [17]. Goodwin (1993) stated that higher yields in the preceding crop season negatively impacted the willingness of a smallholder farmer to adopt crop insurance [18]. He further stated that the presence of high-level of risk factors will lead to a higher acceptance of crop insurance among farmers.

#### **Total farm income:**

Sadati et al. (2010) and Tsikirayi et al. (2012) mentioned that high cash-flow from the agricultural outputs increases the probability of farmers adopting crop insurance schemes as they will have surplus cash account to buy insurance policies and to cover the premium costs, which are usually beyond the capabilities of many small-scale farmers [19] [20]. Mwangi and Kariuki (2015) agreed with the previous findings and also mentioned that a high cash-flow allows the farmers to adopt new technologies and innovations [21]. Money makes people act in different ways. Farmers who have other sources of income can therefore be cushioned in case of a crop failure resulting from bad weather or pests and diseases [11].

#### **Farming experience:**

Sadati et al. (2010) and Tsikirayi, et al. (2012) also highlighted that previous negative experience in losses due to natural causes also positively influences a farmer's opinion regarding crop insurances [19-20].

#### **Knowledge/Awareness on crop insurances:**

Akinola (2014) mentioned that increasing the education levels and awareness among the farmers would lead to better adoption of insurance opportunities because the farmers would have a better understanding of the risk-management approaches, insurance procedures, policies, and the benefits [22].

### **III. METHODOLOGY**

The study was carried out in the eastern region of Lubombo in Eswatini. It covers an area of 5,849.11km<sup>2</sup> and a population of 212,531 (Encyclopedia, 2017). The study concentrated on individual smallholder sugarcane farmers who supply sugarcane to the three sugar mills i.e. Mhlume, Simunye and Ubombo Mill exploring the factors influencing the uptake of crop insurance decisions by the farmers as a risk management tool. The main reason for selecting the Lubombo region is because most sugarcane fields are found there. The primary data was obtained from cross sectional survey of small-scale sugar cane farmers in the study area. A questionnaire was well-designed, validated and pre-tested before administering it to 70 sugar cane farmers purposively selected in the study area. The study areas were purposively selected according to the concentration of small-scale sugar cane farmers. The questionnaire was administered through face to face interviews. The study employed the descriptive statistics and inferential statistics like the Chi-Square test to establish the primary factors that determine sugarcane farmer's acceptance of crop-insurance in the study area [23-25].

### **IV. RESULTS AND DISCUSSION**

Table 1 indicates that majority of the smallholder sugar cane farmers were male (88.6%) and only (11.4%) were female. Result indicates that 5.7% of the farmers aged between 20-30 year age groups and between 30-40 age groups only 27.1% of the farmers (Table-1). This table shows that the majority of farmers were aged between 40 and 50 and mean age of farmers is 49.5 years.

As presented in Table 1, 21.4% of the respondents had attained tertiary level of education and 51.4% of the smallholder sugarcane had secondary education. Only 27.1 % had primary education. Result clearly indicates that majority of the small scale farmers are male (88.6%) and majority of the farmers attained secondary level of education. Maziya (2019) also agreed that the education level has an impact in decision-making among the farmers [26]. The education level of the small-scale sugarcane farmers includes technical expertise and skills which leads to an increased production at minimized level of risks.

Result also shows the distribution of farming experience of the respondents in the Table-1. As illustrated in the table, only 2.9% farmers who had less than 5 experience years in farming and majority 58.6 % had farming experience between 5 to 10 years and 38.6% of the farmers had more than 10 years farming experience. Table-1 also indicates that only 54.3% smallholder sugar cane farmers had knowledge of crop insurance.

Table 1 Socio-Demographic variables

Variable	Frequency	Percent
<b>Gender</b>		
Male	62	88.6
Female	08	11.4
<b>Age</b>		
20-30	4	5.7
30-40	19	27.1
40-50	26	37.1
50-60	13	18.6
>60	8	11.4
Mean Age: 49.64 and Std. Deviation: 10.47		
<b>Marital Status</b>		
Single	12	17.1
Married	48	68.6
Widowed/Divorced	10	14.3
<b>Education Level</b>		
Primary	19	27.1
Secondary	36	51.4
Tertiary & Above	15	21.4
<b>Farming Experience</b>		
<5 Yrs.	2	2.9
5-10 Yrs.	41	58.6
>10	27	38.6
Mean: 10.33 and Std. Deviation: 11.57		

Source: Research findings 2021

**Factors influencing the uptake of crop insurance by smallholder sugarcane farmers**

The results of the Chi –Square ( $\chi^2 = 3.77$  and p value is 0.0521) related to gender indicate that gender has significant influence on the farmers’ use of crop insurance in the study area (Table-2). These findings suggest that women (50% of female sample) are more likely to insure their sugarcane in terms of proportions compared to their male (19% of sampled males) counterpart. Further results in Table 2 indicate that education level (Chi square value = 10.322 and p value is 0.005). and type of land tenure significantly influence farmers’ acceptance of crop-insurance at 1% and 10% significance level, respectively. Thus, sugarcane farmers who attained tertiary education (53% of farmers who attained tertiary) and own title deed land are more likely to insure their sugarcane compared to farmers who attained secondary and primary education. The results are in line with the prior-expectation of the researchers because it is believed that education is important in especially reading and understanding the information provided by insurance organizations which is mostly written in English, and also the title deed land is a guarantee to ease the process of compensation in case of any less production or destruction of the crop fields.

Table-2

Variable	Sugarcane farm insured		Total	Chi-Square & P-Value
	No	Yes		
<b>Gender</b>				3.77 & 0.0521
Male	50	12	62	
Female	4	4	8	
<b>Marital Status</b>				1.093 & 0.579
Single	9	3	12	
Married	36	12	48	
Widowed & Divorced	9	1	10	
<b>Educational Status</b>				10.322 & 0.005
Primary	17	02	19	
Secondary	30	08	38	
Tertiary & Above	07	08	15	
<b>Land Owner</b>				2.788 & 0.095
SNL	33	06	39	
TDL	21	10	31	

Results indicate the awareness levels regarding crop insurance among the small-scale sugarcane farmers. It demonstrated that 54.3% of the respondents were aware about crop insurance. However, a section of the farmers mentioned that their knowledge regarding insurance was limited and they required more information, in order to make informed decisions about adopting insurance schemes.

Table – 3 Distribution of knowledge about crop insurance

Parameter	Frequency	Percentage %
Yes	38	54.3
No	32	45.7
Total	70	100.0

The method of communication sharing is crucial because it influences the amount of information that is available for the farmers, and it also influences how many farmers can access the information. 15.8% of the total farmers gained information about crop insurances through the means of media, such as radio, billboards and newspapers. 30% of the farmers heard about the schemes via friends; and only 13.2% of the received the information through extension workers. 44.7% of the total interviewed sugarcane farmers heard regarding the schemes from crop insurance companies’ agents.

Table - 4 Source of information about crop insurance

Source	No.	Percentage
Family & Friends	05	13.2
Insurance Company	17	44.7
Media	06	15.8
Financial Institution	06	15.8
Ag. Extension officer	04	10.5

The results in Table 5 indicate that majority (55.7%) of farmers reported that crop insurance is important, 17% indicated that insurance was very important, 14% did not know whether crop insurance was important while 13% indicated that crop insurance is not important. This indicates that insurance companies need to add in more efforts to convince 27% of the farmers about the importance of crop insurance.



Table: 5 Opinion regarding the importance of crop insurance

Importance of Crop Insurance	No.	Percentage
Very Important	12	17.1
Important	39	55.7
Not Important	09	12.9
Don't Know	10	14.3
Total	70	100

The responses about farmers' inclination to pay for insurance schemes are presented in Table 6 and they indicate that about 58% farmers were prepared to cover their crops using insurance schemes while 42% of farmers were not willing to pay for the service. Probably because they still have less information regarding the crop insurance or still not sure whether it can meet their risks faced on the farm.

Table 6: Distribution of willingness to pay for crop insurance

Parameter	Frequency	Percentage %
Yes	41	58.6
No	29	41.4
Total	70	100.0

Table 7, indicates the smallholder sugarcane farmers attitudes towards uptake of crop insurance decisions based on four scale Likert scale. From the results of the study, farmers perceive that crop insurance procedures are complicated since insurers require a lot of paper work from farmers before they receive insurance. About 41.4% of the respondents believe that they cannot take crop insurance because of the complicated procedures with a mean of 2.92.

Table 7: Farmers attitudes towards adoption of crop insurance

Statement	D %	SD %	A %	SA %	Mean
Insurance procedures are complicated	21.4	5.7	31.4	41.4	2.92
Information on crop insurance is limited	20.0	8.6	48.6	22.9	2.74
Cannot afford to pay monthly premiums	28.6	11.4	37.7	24.3	2.55
Insurance providers are not friendly	41.4	5.7	31.4	21.4	2.22
Complicated to settle claims after crop loss	25.7	7.1	50.0	17.1	2.61
Payment of claims takes too long	24.3	12.9	40.0	22.9	2.58
Need to have large farms to take insurance	24.3	11.4	42.9	21.4	2.61
No one is using crop insurance in my community	30.0	15.4	34.3	24.3	2.52
Having crop insurance reduces household income	14.3	7.1	44.3	34.3	2.98
Once you forfeit monthly premiums you lose and do not get paid	20.0	5.7	51.4	32.9	2.65

The majority of the respondents mentioned that insurance information is limited, and they did not get much training

on crop insurance as tool for managing risk in farming, of the respondents reported that they did not know about crop insurance and this accounted for a mean of 2.74. The results shows that smallholder sugarcane farmers believed that crop insurance is expensive for them and they cannot afford to pay for monthly premiums since they only get paid once after a year when the sugarcane is harvested and sold to the sugar mills. About 37.7 % respondents agreed that they cannot afford to purchase crop insurance for their sugarcane farms and this was average by 2.55 which shows that most respondents agree to the statement. Moreover, according to the results 42.9% of the farmers believed that crop insurance is for large scale farmers with large farms and the mean was 2.61. The results also depict that respondents viewed crop insurance as instrument that can reduce their household income since there are monthly payments made for premiums and farmers have to spend throughout until they receive their payment from farming. They also believed that by forfeiting a monthly premium a farmer loses all the premiums that he paid thus he will not get paid in case a loss of production.

## V. CONCLUSION

The study acknowledged the dynamics influencing the uptake of crop insurance by small-scale sugarcane farmers, such as farmer's gender, education status and type of land tenure. Based on the finding generated from the data collected from sugarcane farmers, it can be concluded that farmers receptive of crop insurance are most likely female, attained tertiary education and own title deed land. Therefore, this study recommends that insurance companies offering crop insurance and extension workers among other stakeholders need to devise quick means of delivery information related to crop insurance especially to male farmers farming on SNL in simplest way that can be understood by secondary and primary education drop-outs.

The findings of this study were in line with the trends that had been observed throughout the world. For example, it was observed during this study that the farmers with higher levels of education were more likely to adopt insurance opportunities, and this is similar to what many previous researchers have stated from all over the world. Additionally, farmers with higher investment values opt for insurance schemes to safeguard their investments against potential risk-factors, and exactly this trend what was observed in Eswatini. In Eswatini, farmers with title deed land were more receptive to insurance covers as they had invested sums of money to acquire the land deeds. As a result, it is in the favor of insurance companies to invest in awareness programs for the farmers, as informed farmers are more likely to adopt schemes and pay for premiums. It is also a challenge for academicians and researchers to include the concept of risk-management and insurance while training the agriculture professionals of the future. Additionally, academicians and researchers must prepare short-term awareness campaigns and outreach programs to educate the existing farmers about the benefits of insurance, and to motivate them to adopt

risk-management strategies in order to protect during unforeseen natural disasters and losses.

## REFERENCES

- [1] C. F. Thompson. Swaziland Business Yearbook-2014, A Commercial Guide, Mbabane, Swaziland, **2014**.
- [2] A. S. Singh & M. Hlope. "Factors Affecting Adoption of Livestock Insurance: A Case Study of Livestock Farmers in Manzini Region, Swaziland", *Research Journal of Agriculture and Forestry Sciences*, **Vol. 5(8), 1-5, 2017**.
- [3] M. B. Masuku. "Determinants of sugar profitability: The case of small cane sugar growers in Swaziland", *Asia Journal of Agricultural Sciences* 3, no.3, **210-214, 2011**.
- [4] M. B. Dlamini & M. B. Masuku. "Profitability of sugarcane farming in Swaziland: The case of Komati Downstream Development Programme (KDDP) Sugar farmer's association", *Sustainable Agriculture Research* (2 1), **8, 2013**.
- [5] Shashi Kiran and K. B. Umesh. "Willingness to Pay for Crop Insurance Premium-A Study on Maize Farmers in India", *International Association of Agricultural Economists (IAAE), 2015 Conference, August 9-14, 2015, Milan, Italy, 2015*.
- [6] N. Mhazo, A.M. Manyatsi and M.T. Masariramb. "Climate Variability and Change as Perceived by Rural Communities in Swaziland", *Research Journal of Environmental and Earth Sciences*, 2(3), **2010**.
- [7] D. Kumar, S Barah, B.C., Ranganathan, C.R., Venkatram, R., Gurunathan, S. & Thirumoorthy. "Analysis of farmer's perception and awareness toward crop insurance for risk management in Tamil Nadu", *Agricultural Economics Research Review*, **24(1), 37-46", 2011**.
- [8] N. D. Mbonane. "An analysis of farmers' preferences for crop insurance: a case of maize farmers in Swaziland", Master Thesis, Department of Agricultural Economics, Extension & Rural Development Faculty of Natural and Agricultural Science, University of Pretoria, South Africa, **2018**.
- [9] Piot-Lepetit, I. and R. M'Barek. "Methods to analyse agricultural commodity price volatility", *Methods to Analyse Agricultural Commodity Price Volatility*, 1-11, Springer, **2011**.
- [10] D. Abebaw, Holm-Müller, K. and J. Mburu. "Understanding the perceived importance of risk for coffee growers: Empirical evidence from Ethiopia", *Quarterly Journal of International Agriculture*, **45(3):253-268, 2006**.
- [11] R. Aidoo, J. Mensah, P. Wie and D. Awunyo-Vitor. "Prospect of Crop Insurance as a risk management tool among arable crop farmers in Ghana". *Asian Economic and Financial Review*, **4(3): 341-354, 2014**.
- [12] C. Msibi. "Agricultural Insurance", Lidwala Insurance Company; Manzini, Swaziland, **2011**.
- [13] Swaziland Royal Insurance Corporation (SRIC). *Agricultural Insurance Products*, Mbabane, Swaziland, **2011**.
- [14] D. Kahan. "Managing Risk through farming", Food and Agriculture Organization of the United Nations, Rome, 2013.
- [15] M. L. Vanderveer. "Demand for area crop insurance among litchi producers in Northern Vietnam", *Agricultural Economics*, 26, (2001) 173. Economic Research Service, US Department of Agriculture, 1800 M Street NW Room S5013, Washington, DC 20036, USA, **2001**.
- [16] D. Kibirige and Ajay S. Singh. "Efficiency and Goals of Smallholder Sugarcane Farmers in Eswatini (Swaziland)", *Journal of Agricultural Studies*, **Vol. 9, No. 3, 2021**.
- [17] R. Nair. "Crop Insurance in India: Changes and Challenges", *Economic and political weekly*, Vol. 45, Issue No. 06, 2010.
- [18] B. K. Goodwin. "An Empirical Analysis of the Demand for Multiple PerilCrop Insurance", *American Journal of Agricultural Economics*, **75 (2), 425-434, 1993**.
- [19] S. A. Sadati, F. R. Ghobdsi, Y. Mohamadi, O. Sharifi and A. Asakereh. "Survey of effective factors on adoption of crop insurance among farmers: A case study of Behbahan County", *African Journal of Agriculture Research*, **5(16), 2237-2242, 2010**.
- [20] C. M. R. Tsikirayi, E. Makoni & J. Matiza. "Analysis of the uptake of agricultural insurance services by the agricultural sector in Zimbabwe", *Journal of International Business and Cultural Studies*, **7, 1-14, 2013**.
- [21] M. Mwangi and S. Kariuki. "Factors Determining Adoption of new Agricultural Technology by Smallholder Farmers in Developing Countries", *Journal of Economics and Development Studies*, **6(5), 208-216, 2015**.
- [22] B. D. Akinola. "Determinants of Farmers' Adoption of Agriculture Insurance: the Case of Poultry Farmers in Abeokuta Metropolis of Ogun State, Nigeria", *British Journal of Poultry*, **3(2): 36-41, 2014**.
- [23] A. S. Singh. Common procedures for development, validity and reliability of questionnaire, *International Journal of Economics, Commerce and Management*, **Volume V, Issue 5, 790-801, 2017**.
- [24] A. S. Singh, Sotja G. Dlamini and Douglas Kibirige. "Statistical Gears and Concerns for Allied and Health professionals", *International Jr. Science Research and Methodology*, **Vol. 19 (1): 63-112, 2021**.
- [25] A. S. Singh and M. B. Masuku. "An Insight Statistical techniques and design in agricultural and applied research", *World Journal of Agricultural Sciences*, **8(6): 568-84, 2013**.
- [26] S. Maziya. "The impact of the European Union grant on access to credit and production in smallholder sugarcane agriculture in Siphofaneni", Doctoral dissertation, university of Pretoria, South Africa, **2019**.