Factors Affecting the Uptake of Agriculture Insurance by Farmers in Ankole Sub-Region, South Western Uganda

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Abstract

Over several decades, agriculture has remained the backbone of the Uganda's economy. The government of Uganda introduced the agriculture insurance scheme as one of the initiatives to reduce agricultural risks. However, the uptake of agriculture insurance is still low among farmers in Uganda and south western Uganda is not an exception. There is a wide knowledge gap on the factors limiting the uptake of agriculture insurance by farmers in rural south western Uganda and this study is conducted to fill the gap. The study employed a cross-sectional survey design to collect data from 384 farming households from three selected districts in Ankole sub-region; Kazo, Kiruhura and Isingiro. Data was collected using face-to-face surveys conducted with household heads. In the analysis, descriptive statistics were generated using SPSS version 21.0 and results were presented in frequency tables, graphs and charts. The study findings revealed that the most significant factors affecting uptake of agriculture insurance among farmers in Ankole sub-region are low level of income affecting affordability, lack of education affecting knowledge and awareness, low expectation of risk occurrence, trust issues against insurance providers, limited accessibility of agricultural insurance policies by farmers and stringent terms and conditions surrounding agricultural insurance. The study concluded that the low uptake of agricultural insurance by farmers in Ankole sub region is largely explained by socioeconomic factors and institutional factors. Hence, addressing these challenges is key to improving insurance uptake in the region. The study provided several recommendations that can be adopted by the government, insurance companies and other stakeholders in the agro insurance consortium in order to improve uptake of agriculture insurance. These include farmer education and sensitization, extensive marketing campaigns, increased outreach of insurance offices and increased collaboration between insurance stakeholders.

Keywords: *Factors, Agricultural Insurance, uptake, farmers, Ankole sub-region, Southwestern Uganda*

1.0 Introduction

Globally, the agricultural sector is a major economic sector and a critical source of livelihood in many developing countries. Agriculture is particularly exposed to adverse natural events, such as pest infestation and poor weather conditions, which negatively impact production.

Besides threatening global food security and stability, these shocks can cripple livelihoods, disrupt value chains, and even undermine macroeconomic stability (Baskaran & Maher, 2021). The economic costs of major climatic disasters may increase further in the future due to climate change.

Farmers have developed risk management strategies to cope with these adverse events, sometimes with government assistance (The World Bank, 2012). Agricultural insurance is one financial tool that farmers can utilize to mitigate the impacts of unpreventable risks.

Agricultural Insurance is a valuable business risk management tool that provides farmers with financial protection against production losses caused by natural perils, such as drought, excessive moisture, hail, frost, wind and wildlife (Government of New Bruswick, 2019; International Labour Organization, 2020).

Agriculture insurance can be an antidote to agriculture risks as it de-risks lending to the agricultural sector enabling repayment of loans, reduces budget volatility of agriculture-related fiscal expenditures by transferring climatic risk to the private sector, increases fiscal space during shock years, and stimulates growth of the agriculture sector (Baskaran & Maher, 2021).

Today, about half of all agricultural farms in low and middle income countries (LMICs) have at least some agricultural insurance globally.

Approximately 265 million agricultural insurance policies are currently sold in LMICs (Hazell et al., 2021). However, agricultural insurance coverage is still limited and not equally distributed among countries especially in low and middle income countries (Hazell et al., 2021). About 95 per cent of insured farms in low and middle income countries are in China and India where 80 per cent of all farms have some agricultural insurance (Hazell et al., 2021). However, Less than 10 per cent of farms in other low and middle income countries have agricultural insurance and in Africa this share is even smaller (Hazell et al., 2021).

In Africa, about 70 per cent of agricultural insurance programmes are led by the private sector. The remainder are initiated by governments, donor agencies or NGOs, but still private insurers are involved in implementation through public-private partnerships (PPPs) (Hazell et al., 2021). However, insurance penetration across Sub-Saharan Africa is still low; below 3 percent, with even lower percentages of farmers and rural dwellers covered against climate-based risks and shocks (International Labour Organization, 2023).

In Zimbabwe, agricultural insurance contributes only 6% towards total premium (The Sunday Mail, 2022). In Nigeria, Agriculture insurance uptake in particular remains significantly low, with penetration currently standing at 3 percent (Kimeria, 2018). In Kenya, the level of agricultural insurance uptake and penetration is still very low with less than 1% of farmers and pastoralist purchasing insurance (Ministry of Agriculture Livestock Fisheries and Cooperatives, 2021).

In Uganda, where around 70% of Uganda's total population depend on agriculture for their livelihood (InsuResilience Global Partnership, 2021), the current penetration of agricultural insurance remains staggeringly low covering less than 1% of the farming population (Muhoozi, 2023). While agriculture insurance remains low, the agriculture sector continues to face erratic weather patterns, floods, landslides and pest invasions which cause acute poverty, threatens food insecurity and contributes to deprivation (InsuResilience Global Partnership, 2021).

In Rural Ankole sub-region for example, agricultural shocks have been one of the hindering factors to agricultural productivity yet the population depends on agriculture for a living. In 2016 for example, Isingiro district, Uganda's banana basket was hardly hit by draught causing massive famine in the area after all the bananas were affected by draught (Kushaba, 2016; The independent, 2016). A similar case also happened in Kazo district where livestockin most households emaciated and died out in June-August, 2017 due to starvation following prolonged drought in the area that stretched from December 2016 to April 2017 and another dry spell from June–August of the same year (Daily Monitor, 2021; Tumushabe & Mukombozi, 2016).

Districts in the cattle corridor have traditionally been hit by drought causing scarcity of water and pasture for the last 17 years (Kinene, 2021; Nansamba et al., 2022; Tumushabe & Mukombozi, 2016).

Rain storms have also become a menace to the agricultural sector in this region (Nahamya, 2022; New Vision, 2021). These agricultural shocks have usually caused huge financial losses to farmers which affects their incomes and limits their ability to eradicate poverty (Nansamba et al., 2022).

As one of the initiatives to manage the financial impacts of agriculture production shocks, the government of Uganda (GoU) in partnership with private insurance companies, launched the Uganda Agriculture Insurance Scheme (UAIS) in July 2016 to ensure that Ugandan farmers are protected against the effects of agriculture risks, especially production risks, to increase farmers' access to credit and to make crops, livestock, and aquaculture insurance affordable to smallholder producers. The UAIS offers a range of crop, livestock, poultry, and aquaculture insurance coverage to Ugandan farmers (MoFPED, 2022).

Under the scheme, government provides premium subsidy funds to farmers which are 50%, 30% and 80% for small scale farmers, large scale farmers, and high risk and disaster-prone areas respectively (Sande, 2017).

The government has collaborated with 13 insurance companies and several commercial banks to undertake publicity, sensitization and training of farmers about agriculture insurance through the Agro Insurance Consortium (Agro Consortium, 2020).

The Uganda Insurers Association (UIA) is responsible for administration of the agriculture insurance scheme while the Insurance Regulatory Authority of Uganda (IRA) provides the regulatory oversight and quality control. On the other hand, the Bank of Uganda (BoU) manages the drawdown on UAIS Account, while the Monitoring and Evaluation of the Scheme is done by the UAIS Technical Working Committee (MoFPED, 2022).

Despite all the efforts put in place to promote agriculture insurance, the uptake of agriculture insurance among crop and livestock farmers in Uganda is still low below 20% (Agaba, 2022). There are limited studies in Ankole sub region that have tried to examine the factors limiting the uptake of agriculture insurance by farmers (Sande, 2017). It is against the above introduction that the study seeks to analyze the various factors limiting the uptake of agriculture insurance by farmers in rural south western Uganda.

1.1 Problem Statement

Agriculture insurance plays a significant role in ensuring that farmers are protected against the effects of agriculture risks, increasing farmers' access to credit and making crops, livestock, and aquaculture insurance affordable to smallholder producers (MoFPED, 2022). With all these benefits of agriculture insurance, farmers are ideally expected to embrace the agriculture insurance by buying insurance cover.

Despite the significant benefits of agriculture insurance, the uptake of agriculture insurance among farmers in Uganda is still low not only in Uganda but in low and middle income countries globally (Hazell et al., 2021). Statistics indicate that with exception of China and India, uptake of agriculture insurance in low and middle income countries is less than 10 per cent (Hazell et al., 2021). In Africa, the uptake of agriculture insurance is below 3 percent, with significantly lower percentages of farmers and rural dwellers covered against climate-based risks and shocks (International Labour Organization, 2023).

Uptake of agriculture insurance is as low as 6% in Zimbabwe (The Sunday Mail, 2022), 3% in Nigeria (Kimeria, 2018) and less than 1% in Kenya (Ministry of Agriculture Livestock Fisheries and Cooperatives, 2021) and also less than 1% of the farming population in Uganda (Muhoozi, 2023). In Ankole sub region, uptake of agriculture insurance is only 15% yet the area has been prone to natural disasters, harsh climatic conditions, pests and diseases for the last decade (Agaba, 2022). Studies in other countries like Kenya attribute low uptake of agricultural insurance to farmers' socioeconomic and social cultural factors as well as institutional factors surrounding the insurance agencies and government (Nyabochwa, 2015).

However, it remains unknown yet whether these factors also apply to the Ugandan context especially Ankole sub-region and no study has been conducted in Ankole sub-region to understand the specific socio-economic, sociocultural and institutional factors limiting the uptake of agriculture insurance by farmers. An understanding of all these factors would assist the researcher to suggest the appropriate policy measures for scaling up the uptake of agriculture insurance among farmers in rural south western Uganda (Sande, 2017). This is what justified the need for the study. The purpose of the study was to analyze the various factors limiting the uptake of agriculture insurance by farmers in Ankole sub-region, South western Uganda.

1.2 Significance of the Study

The study would be of great importance to the government of Uganda to understand why the policy introduced to reduce agricultural shocks among farmers, has not been embraced by the target beneficiaries. This was an eye opener to the government ministries and legislators to consider policy review in favor of the farmers.

The study was significant to policy makers including the Uganda Insurance Regulatory Authority to understand the appropriate policy measures that can be put in place to scale up the uptake of agriculture insurance among farmers in Ankole sub-region, south western Uganda.

The study would assist the insurance companies in the Agro Insurance Consortium to recognize the need for more efforts in undertaking publicity, sensitization and training of farmers about agriculture insurance. This might help to boost the uptake of agriculture insurance hence contributing positively to the performance of insurance companies in terms of sales of insurance cover.

The researcher through the research assistants sensitized and created more awareness about agriculture insurance to farmers who participated in the study and encouraged most of them to embrace the policy for their own benefit.

The study assisted the researcher who happens to be one of the stakeholders in insurance sector, to understand why most farmers do not buy agriculture insurance policy. This helped the researcher to propose appropriate strategies that can be employed to improve the uptake of agriculture insurance in the sector.

1.3 Justification of the Study

Agricultural insurance plays a significant role towards the realization of Sustainable Development Goals (SDGs) including no poverty (goal SDG 1), zero hunger (SDG 2), and climate action (SDG 13) by enhancing poverty reduction, food security and climate change adaptation (UNDESA, 2023; Vyas et al., 2021). These goals can only be realized if farmers embrace the agriculture insurance programmes initiated or implemented by private, government or non-profit organizations (Vyas et al., 2021). This study was therefore key in understanding why agriculture insurance programmes are not usually taken up by farmers. If the study was not undertaken, farmers would continue to encounter significant financial losses due to climatic hazards and disasters which would make it hard to realize the said SDGs.

2.0 Theoretical Review

The study was guided by the theory of constraints (TOC) developed by Blackstone (2010). The Theory of Constraints is a methodology for identifying the most important limiting factor (constraint) that stands in the way of achieving a goal and then systematically improving that constraint until it is no longer the limiting factor (Hamada, 2007; Lean Production, 2020; Rahman, 1998; Urban & Rogowska, 2020). In agriculture, the constraint is often referred to as natural disasters including draught, hurricanes, floods, fires, earthquakes, and tornadoes, pests and diseases among others(United States Environmental Protection Agency, 2023).

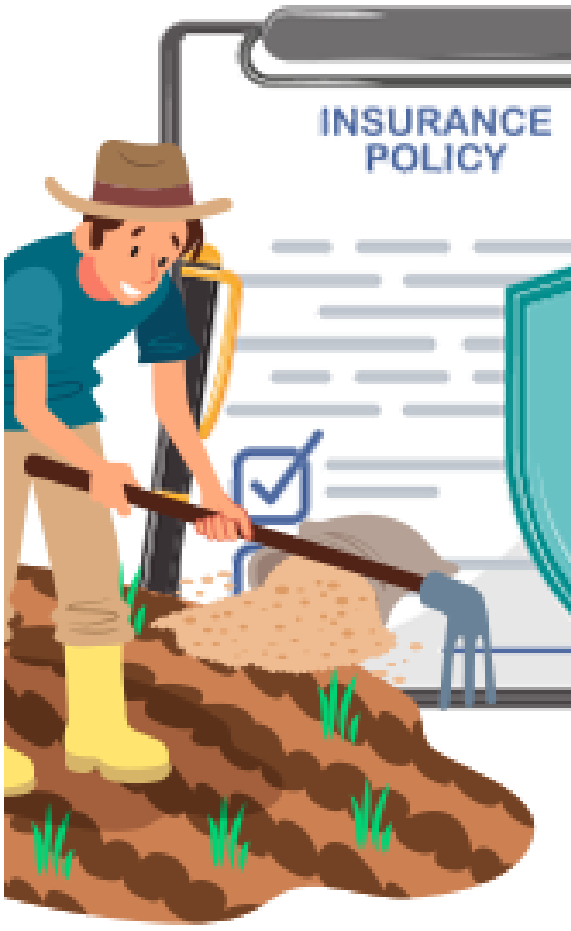
The TOC hypothesizes that every complex system consists of multiple linked activities, one of which acts as a constraint upon the entire system which determines the performance of a system by preventing it from achieving a higher performance relative to its goal (Blackstone, 2010).

The Theory of Constraints was first created by Dr. Eliyahu M. Goldratt in 1980 and since then, the theory has been applied to production planning, production control, cost control, project management, supply chain management, performance measurement among others (Draman et al., 2002).

The theory of constraints provides a coherent management theory for running a agricultural farm based on two major components: a philosophy which underpins the working principle of on-going farm improvement, and a generic approach for investigating, analyzing and creating solutions to problems/risks called the 'thinking process' (Blackstone, 2010; Motwani et al., 1996; Zivaljevic, 2015).

The theory of constraints' key assumption is that a farmer can manage the agricultural farm by measuring and controlling three things; throughput (the rate at which the farm generates income through sale of output), operational expense (the money spent when generating output) and investment(the money that is invested in agriculture to purchase machinery, inputs and pay labour etc.) (Boogaard, 2021; Kate, 2017; Landau, 2018).

The main goal of theory of constraints is to streamline management of agriculture shocks to maximize productivity, reduce operating expenses, increase profit and return on investment, increase capacity and throughput rate (Landau, 2018). The theory of constraints is relevant in this study since it helps farmers to identify the major constraints that contribute to increased costs and limit the farm's ability to achieve maximum profitability and put in place appropriate measures to deal with some of the constraints/ bottle necks (Landau, 2018).



However, the theory of constraints is limited in that its implementation demands changes in the production processes which may become challenging to sustain in the long run (Lazarski, 2010). The theory is also limited in a way that it provides solutions to the primary constraint but does not consider other constraints that may arise out of the decisions to reduce the current constraint (Palmeri, 2017). For example, insurance may limit the farmer's ability to invest in improved technology such as irrigation to deal with prolonged draught (Javed, 2022). Another limitation of the ToC is that it only applies where the constraint is known but may not apply in the determination of the constraint (Mrsic, 2017). There may be many constraints that cannot be controlled by the farmer through insurance such as poor infrastructure, inadequate access to markets, land and environmental degradation, inadequate research and extension services yet the ToC does not describe how such constraints are controlled (Javed, 2022).

2.1 Empirical Literature Review

Agaba (2022) examined the factors influencing adoption of agriculture insurance as a climate change adaptation strategy by cattle producers in the cattle corridor of Uganda. The study used a cross-sectional descriptive design on 75 cattle keepers and insurance agents. The findings of this study indicate that uptake of agriculture insurance is very low at only 14.5%. The major factors influencing adoption of agriculture insurance were limited knowledge about agriculture insurance (49.5%), farmers' speculation of high cost of premium (20.5%), negative perceptions and unfavourable agriculture insurance policies.

Kaunda et al. (2022) conducted an an analysis of factors influencing uptake of agriculture index insurance among smallholder farmers—a case of kasama district in Zambia. This was a correlational quantitative study conducted from 200 farmers and 5 key informants. The findings revealed that the uptake of Weather Index Insurance (WII) in Zambia is low where age, knowledge and alternative source of income are hindering factors.

Kislingerová & Špička (2022) analyzed the factors influencing the take-up of agriculture insurance and the entry into the mutual fund: a case study of the Czech Republic. Data was collected from 214 representative farms processed using descriptive statistics, paired t-tests, binary logistic regression, and contingency analysis. The factors identified in this study include low agricultural area, distrust in insurance companies, and high probability of losing more than 20% of production, the high price of insurance premiums and availability of alternative strategies.

Ankrah et al. (2021) conducted a study about agriculture insurance access and acceptability: examining the case of smallholder farmers in Ghana. This was a cross-sectional survey involving 200 farmers under a mixed methods approach done in 7 communities in 5 districts. The study findings revealed that uptake of agriculture insurance is low (14%). In this study, most (90%) of the farmers had a positive attitude and perception about agriculture insurance. The most common factor hindering the uptake of agriculture insurance are inadequate knowledge (64%), unavailability of agriculture insurance products (23%) and high premium costs (5%). This study was conducted in Ghana, considered crop farmers only and cannot be generalized to Ugandan context.

Nshakira-Rukundo et al. (2021) examined the determinants of uptake and strategies to improve agriculture insurance in Africa: a review. This was a systematic literature review on studies in Africa. The findings revealed that insurance products are often of poor quality and their acquisition can lead to worse outcomes than without them. The hindering factors include low coverage, farmers' budget constraints, low level of education, knowledge and information and low government intervention. The study was however based on secondary literature some of which is very old and lacks empirical evidence of primary data especially in the Ugandan context.

Njue et al. (2018) studied the uptake of crop insurance among Smallholder Farmers based on insights from Maize Producers in Kenya. Data was collected from 400 maize-producing households in areas where weather index-based insurance had been promoted. The study findings revealed that uptake of agriculture insurance is very low and declining. The study further revealed that the insurance concept is not well understood by farmers. High levels of dissatisfaction with claim payments, low level of awareness and training on were the most common factors affecting agriculture insurance uptake. The study was however conducted in Kenya, limited to crop insurance (maize) and may not be applied to other crop types.

Oino et al., (2012) conducted a national Survey on Enterprises Perception on Insurance in Kenya and findings revealed that there were low level of awareness on agricultural insurance. The major barriers to agricultural insurance uptake included being expensive (34%), business is still young 17%, lack of knowledge about insurance (17%), dishonesty of Insurance providers (9%), too much time taken in processing of claims (4%) and lack of specific products that fits their business (6%) among others.

Harald (2020) found that uptake of agricultural insurance in Zimbabwe remains very low and some of these stated reasons include lack of insurance products that address the needs of smallholder and subsistence farmers, general mistrust in insurance services and reliance on traditional self-insurance in risk and loss management.

Another study by Centre for Science and Environment (CSE) (2018) in Nigeria found that the challenges associated with agricultural insurance uptake in Nigeria were low market coverage and insurance penetration, budgetary constraints due to slow and non-payment of premium subsidy, high overhead costs due to the wide nature of coverage and the scheme participation is low due to financial institutions lack of interest in lending to agriculture.

Nyabochwa (2015) found that awareness influences the use of Agriculture insurance among farmers in Kiambu County. This was evidenced by the fact that 30% of the farmers in Kiambu County had not heard of Agriculture insurance and the fact that only 10% of the farmers interviewed had Agriculture insurance cover for their crops and livestock. The study also found that socio-economic factors such as the cost of insurance, type of farming practiced, risks surrounding crops and livestock and income generated from farming influences the use of Agriculture Insurance. The study finally found that stakeholders influence the use of Agriculture insurance through offering insurance at high costs premiums, long procedures in the acquisition of the policy, delays in compensation in case of loss, inadequate creation of awareness on the available policies and limited risk coverage by the insurance firms.

3.0 Materials and Methods

The study employed a cross-sectional research design to collect data from farmers in districts of Ankole sub region, South western Uganda. This design was preferred because it collects reliable data within a short period of time. The study was quantitative in nature involving descriptive statistics to quantify and categorize factors according to strength (Bhat, 2022).

3.1 Study Area Description

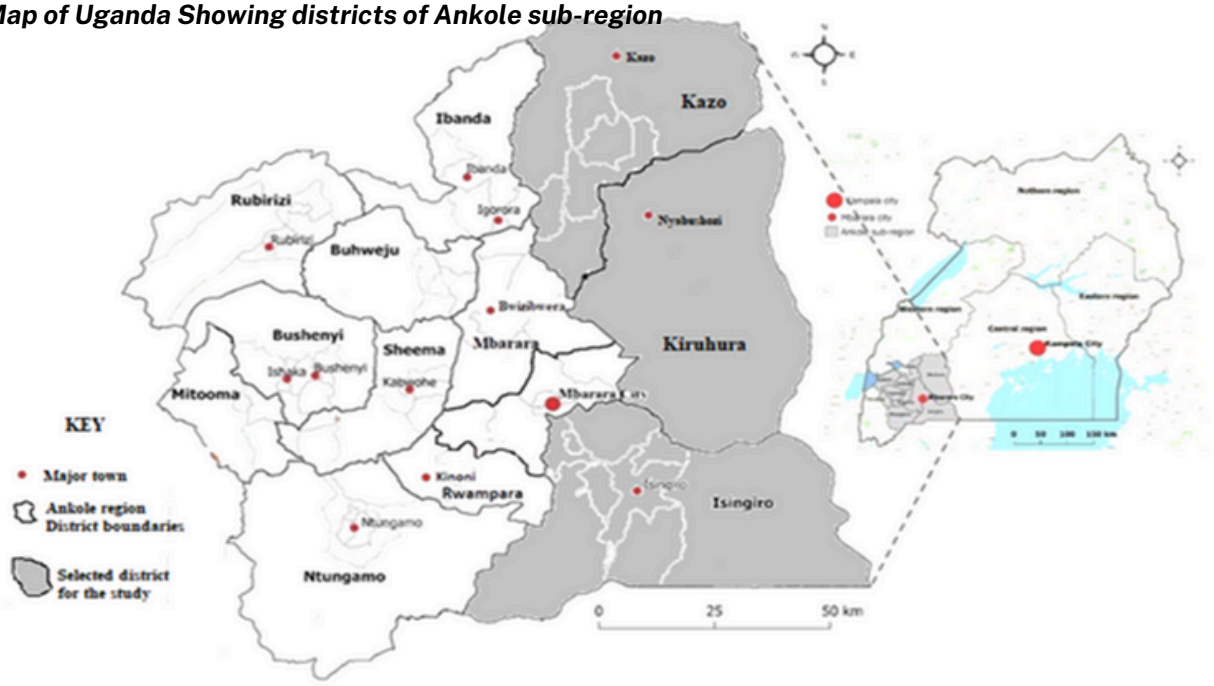
The study was conducted from Ankole sub-region located in southwestern Uganda. Ankole takes its name from the Kingdom of Ankole, one of the traditional kingdoms of Uganda. At its formation, Ankole sub-region was divided into six smaller administrative units: Bushenyi District, Ntungamo District, Mbarara District, Kiruhura District, Ibanda District, and Isingiro District. Today, Ankole sub-region is divided into 12 districts including: Bushenyi, Sheema, Mitooma, Rubirizi, Ntungamo, Mbarara, Rwampara, Kiruhura, Kazo, Ibanda, Isingiro and Buhweju. Of these, three (3) districts; Isingiro, Kiruhura and Kazo have been widely hit by draught, pests and diseases as well as rain storms following looming news on radios and televisions (Kinene, 2021; Nansamba et al., 2022; Tumushabe & Mukombozi, 2016).

3.2 Study Population

The study population included 167,494 farmers in three districts; Isingiro, Kazo and Kiruhura all found in Ankole sub region, South Western Uganda. These comprised of both crop and livestock farmers who produce for either home consumption or for sale in selected districts of Ankole sub region. The unit of analysis comprised of households involved in farming in selected districts and the unit of inquiry included the household heads. According to the UBOS and UNFPA (2016), there are 106,089 households in Isingiro district, 28,173 households in Kiruhura district and 33,232 households in Kazo district (UBOS & UNFPA, 2014). There had been reports in the news about the death of livestock in Kazo and Kiruhura since 2016 and the wide famine in Isingiro district after the massive loss of banana plantations due to heavy rain storms, draught and pests (Kushaba, 2016; Nahamya, 2022; New Vision, 2021; The independent, 2016). The study therefore used three districts; Isingiro, Kazo and Kiruhura as case studies to get reliable information about why they do not undertake agriculture insurance yet they have been widely hit by agricultural shocks and harsh climatic conditions.

Figure 1

Map of Uganda Showing districts of Ankole sub-region



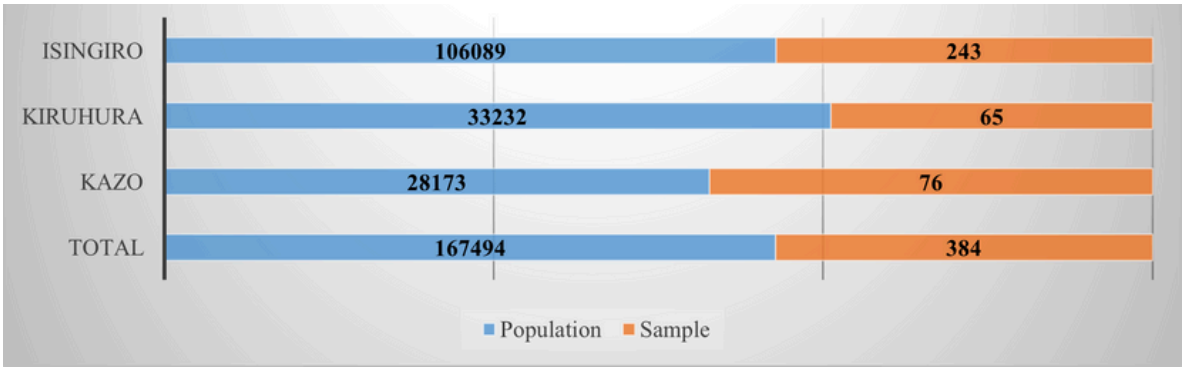
Source: Extracted from Google maps, 2023

3.3 Sample Size

The sample size included 384 respondents determined using Krejcie and Morgan tables using the total number of households (167,494) in three (3) districts selected in Ankole sub-region. According to Kjejcie and Morgan table, a sample size (n) of 384 respondents was appropriate for a study population (N) of above 75,000 people. The sample size was apportioned in proportion as the study population per selected district as shown in figure 2.

Figure 2

Sampling frame



3.4 Sampling techniques

The study used stratified sampling technique to categorize the study. This is a probability sampling technique in which the sample size was apportioned into different categories in equal proportions of the study population per category (Ranjit, 2019). This method was used because it ensured equitable representation since farmers were selected from every district within the study area.

At the household level, respondents were selected by purposive sampling where only the household head was recruited for the study. This is the one who takes decisions to insure crops and livestock since they are the sole owners of the key resources like land used for agriculture production.

3.5 Data Collection

The study used Face-to-face survey to collect data from farmers in Ankole sub-region. In this case, data was collected by administering a survey with household heads in different farming households in the study area (Bhat, 2022). The study used a semi-structured questionnaire as a tool for collecting data from farmers in Ankole sub-region. This is basically a list open and close ended questions that would be answered by the farmers during the process of data collection (Ranjit, 2019). In this study, the questionnaire was administered by the researcher on behalf of the respondent basing on the information or explanation submitted by the respondent. This method was used because it eased the process of data collection and analysis especially where the study was conducted among the population with less educated people (Ranjit, 2019).

3.6 Data Quality Control

Data quality control was ensured by computing content validity and inter-rater reliability of research instruments. Content validity refers to the degree to which an assessment instrument is relevant to, and representative of, the targeted construct it is designed to measure (Rusticus, 2014). On the other hand, inter-rater reliability is the extent to which two or more raters (or observers, coders, examiners) agree that the construct or variable measures what it purports to measure (Lange, 2011). In this study, both content validity and inter-rater reliability were determined through expert review method where the questionnaire was subjected to scrutiny by three (3) raters in the field of insurance. Items rated relevant were given a numeric value of '1' while those rated irrelevant were given the numeric value of '0'. Likewise, the numeric value of '1' was also assigned to similar ratings between two raters and '0' assigned to different ratings between two raters for each individual item. The results are shown on table 1.

Table 1

Data Quality Control (Content Validity and Inter-Rater Reliability tests)

Control measure	Rater	No. of item rated relevant (N_R)	No. of items with similar ratings by two or more raters (N_A)	Total N of items (N)	CVI (N_R/N)	IRR (N_A/N)
Content Validity Index (CVI)	Rater 1 (R_1)	13		21	0.619	
	Rater 2 (R_2)	15		21	0.714	
	Rater 3 (R_3)	20		21	0.952	
	Average	**16**		**21**	**0.762**	
Inter-Rater Reliability (IRR)	Rater 1&2 (R_{12})		19	21		0.905
	Rater 2&3 (R_{23})		16	21		0.762
	Rater 1&3 (R_{13})		14	21		0.667
	Average		**16.33**	**21**		**0.778**

Source: Expert Review, 2023

Various scholars argue that the research instrument can only be regarded as valid if the Content validity index (CVI) of the instrument is 0.70 or above (Amin, 2005; Shi et al., 2012). Likewise, high inter-rater reliability values (IRR>0.70) refer to a high degree of agreement between two or more examiners while low inter-rater reliability values refer to a low degree of agreement between two examiners (Lange, 2011). Since both the CVI and IRR for this study meets the recommended threshold (0.70 and above), the instrument was considered adequate for collecting valid and reliable data.

3.7 Data Analysis

Data was analyzed by generating descriptive statistics such as frequencies, mean and standard deviation presented in frequency tables, charts and graphs. A statistical software particularly Statistical Package for Social Scientists (SPSS) was employed in data analysis since this has been widely used to analyze huge data (Pallant, 2020).

3.8 Ethical Considerations

The study researcher obtained approval from the Insurance Training College before going for data collection. Permission was also be obtained from the district production officers of different districts in Ankole sub region. Consent was obtained from respondents and steps were undertaken to ensure confidentiality of subjects and data by ensuring disclosure of farmers' names and identity. Plagiarism was avoided by thoroughly paraphrasing the work and citing any work that is not own.

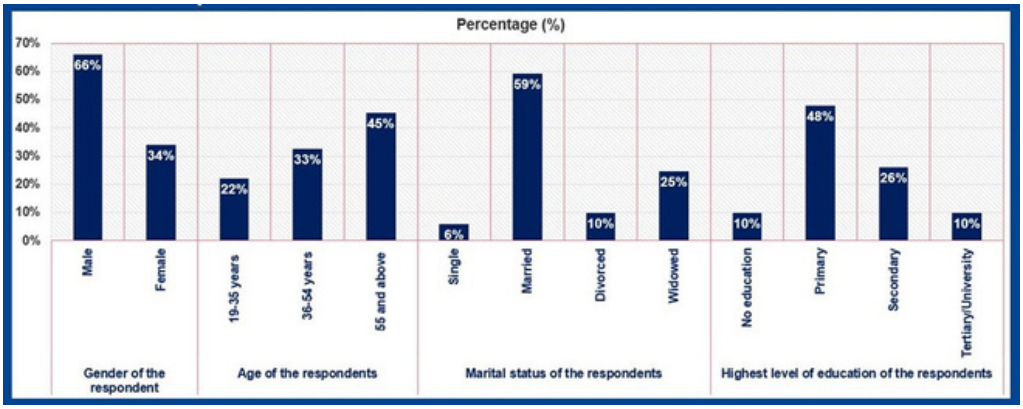
4.0 Results

4.1 Respondents' Biodata

Results from the figure 3 below show that majority (66.0%) of the respondents were males which implies that most farmer households in Ankole sub-region are headed by people who are key decision makers in the family and owners of resources and assets that can be insured against agricultural shocks. The study findings show that majority of the farmers in Ankole sub-region are adults above 35 years who account for 78% of the entire population of household heads in the region while 22% are youth. The study findings show that most (59.3%) farming households in Ankole sub-region comprise of married couples whose combined efforts and decisions could have an influence on uptake of agriculture insurance. Married people tend to be more responsible and will tend to worry about food security more compared to those who are single, widowed or separated. Hence, they are more likely to embrace agriculture insurance than other marital statuses.

Figure 3

Respondents' bio-data



Source: Primary Data, 2023

The study findings show that most (48.0%) of the farming households in Ankole sub-region have low levels of education and this has an implication on the knowledge and awareness about agriculture insurance.

4.2 Socioeconomic Profile of Farmers in Ankole Sub-Region

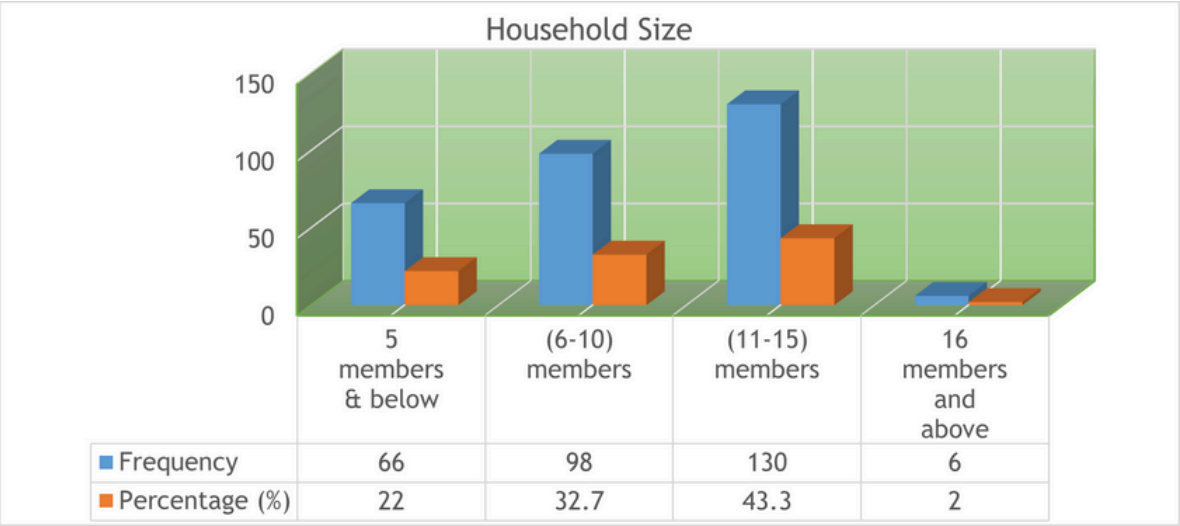
The socioeconomic profile of farmers in Ankole sub-region was also investigated including household size, type of farming, income earned from farming, alternative sources of income and results are presented in the following subsections;

4.2.1 Household size

The household size of the farming households in the study area was assessed and results are shown in figure 4 below.

Figure 4

Household size



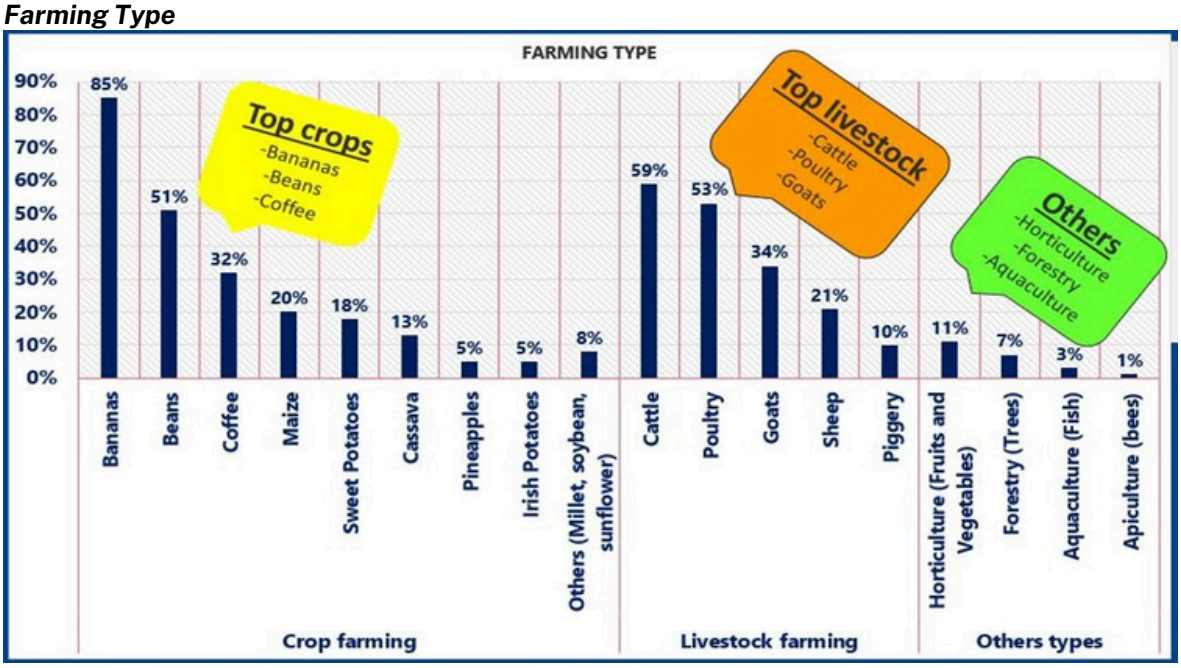
Source: Primary Data, 2023

4.2.2 Type of farming

The responses on the different types of farming practiced by farmers in Ankole sub-region are presented in figure 5 below.

Figure 5

Farming Type



Source: Primary Data, 2023

The study findings revealed that there are different types of crop farming in Ankole sub-region where banana growing is the most dominant form practiced by 85.3% of the households. This was most common in most parts of Isingiro district mainly Nyakitunda, Ngarama, Kashumba and Rugaaga sub counties. This was followed by beans grown by 50.7% predominantly in Kazo district. Coffee growing was the third most prominent crop farming type in 31.7% of the households mainly in the sub-counties of Kikagate, Ruborogota, Endiinzi, Nyamuyanja, Kabingo Isingiro TC and Kaberebere TC. Maize growing was also common among farming households in Kazo and Isingiro districts while pineapples were only grown in Isingiro district in parts of Masha, Kaberebere and Kabuyanda sub-counties. Irish potatoes were also produced in the sub-counties of Nyakitunda, Kabuyanda, Ngarama and Rushasha sub counties. Other crop types such as millet, soybean and sunflower were common in some parts of Kiruhura district.

On the other hand, cattle growing was the most dominant form of livestock farming practiced by 59.3% of the total number of households in selected districts of Ankole sub-region. This was found to be the main economic activity in Kiruhura and Kazo districts.

In Isingiro district, livestock rearing of cattle and goats was practiced in the sub-counties of Endiinzi, Kashumba, Ngarama, Masha, Ruborogota, Mbaare and Isingiro TC. Poultry was the second dominant type of livestock farming practiced by 53% of the total number of households sampled. However, none of the households was found to do poultry as a commercial enterprise. Most of them had local chicken as a domestic bird which they could slaughter in case of a visitor or sold in case of emergent need of money. Goat rearing was also a common type of agriculture practiced by 33.7% of the sampled population. This was in most cases reared a long with cattle among households with cattle farmlands. Likewise, sheep rearing was found to be a common practice among cattle keepers practiced by 20.7% of the households. Piggery was the least livestock activity practiced by only 10% of the households.

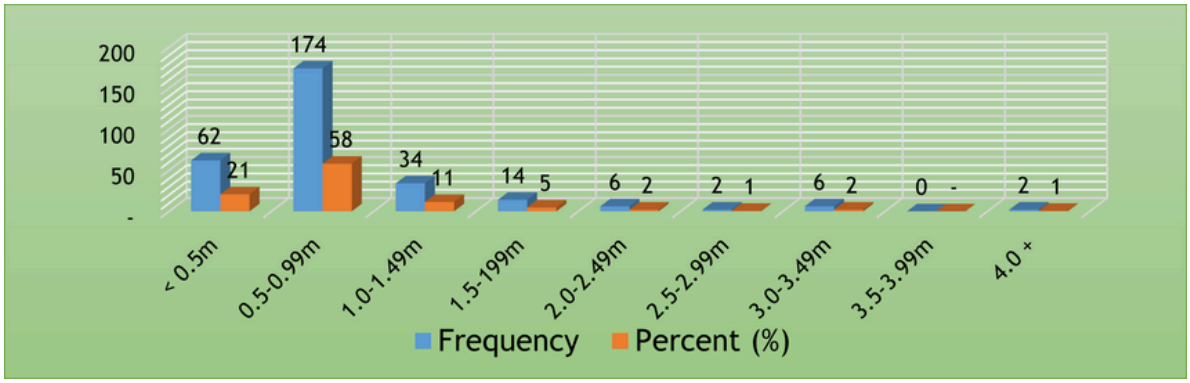
Besides crop and livestock farming activities, the study found that some farmers involved in other types of agriculture where 11.3% involved in Horticulture (Fruits and Vegetables), 6.7% involved in Forestry (Trees), 2.7% involved in Aquaculture (Fish) while only 1% involved in Apiculture (bees).

4.2.3 Level of income from farming

Most farmers in Ankole sub-region were found to have different income classes ranging from as low as UGX 300,000 to as high as UGX 4,000,000 as shown in figure 6 below.

Figure 6

Income levels of farmers in Ankole sub-region



Source: Primary Data, 2023

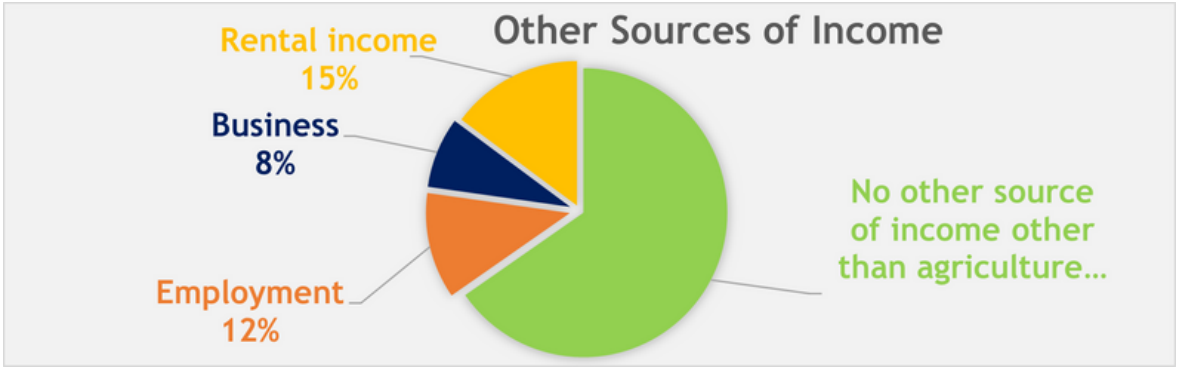
As shown in figure 4.2 above, majority (58%) of the farmers were in the income class between UGX 500,000 and UGX 1,000,000 per month while only 1% of the farmers earned only UGX 4,000,000. To sum up the percentages, nearly 80% of all farmers in Ankole sub-region earn less than UGX 1,000,000 from agriculture. This is mainly due to the fact that agriculture is susceptible to agricultural shocks which reduce a significant portion of their expected returns from agriculture. If farmers could utilize agriculture insurance, their incomes could improve significantly.

4.2.4 Other sources of income

The study also examined if farmers have other sources of income other than agriculture and results are shown in figure 7 below.

Figure 7

Other sources of income



Source: Primary Data, 2023

Majority (65%) of the farmers in Ankole sub-region survive on agriculture as their main source of income. Only 35% of the farmers have other sources of income. Of these, 15% had property and real estate from which they earned rental income, 12% had some side employment from which they earned salary while only 8% had business from which they earned income.

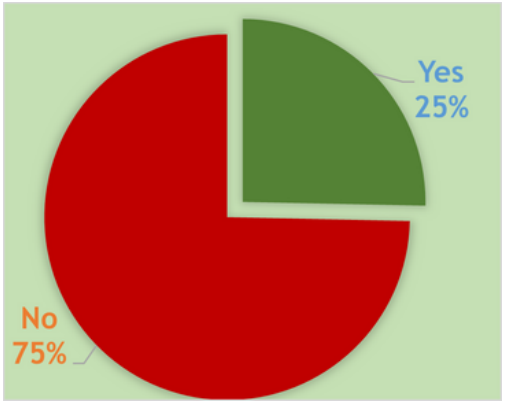
4.3 Knowledge about Agricultural insurance

The study also evaluated the farmers' knowledge about agricultural insurance and source of knowledge. The results are presented in figure 8 below

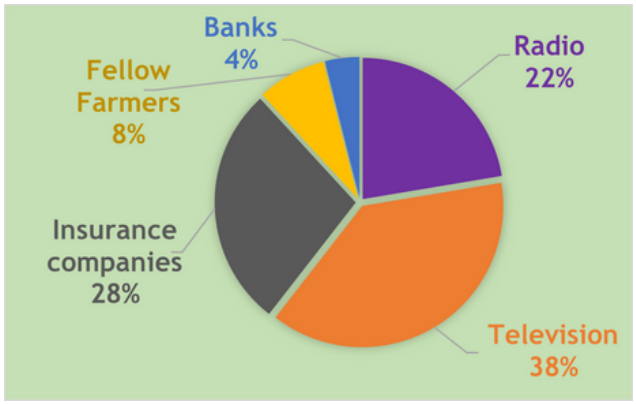
Figure 8

Knowledge about Agriculture insurance

Ever heard of AI (N=300)



Source of Information on AI (N=76)



Source: Primary Data, 2023

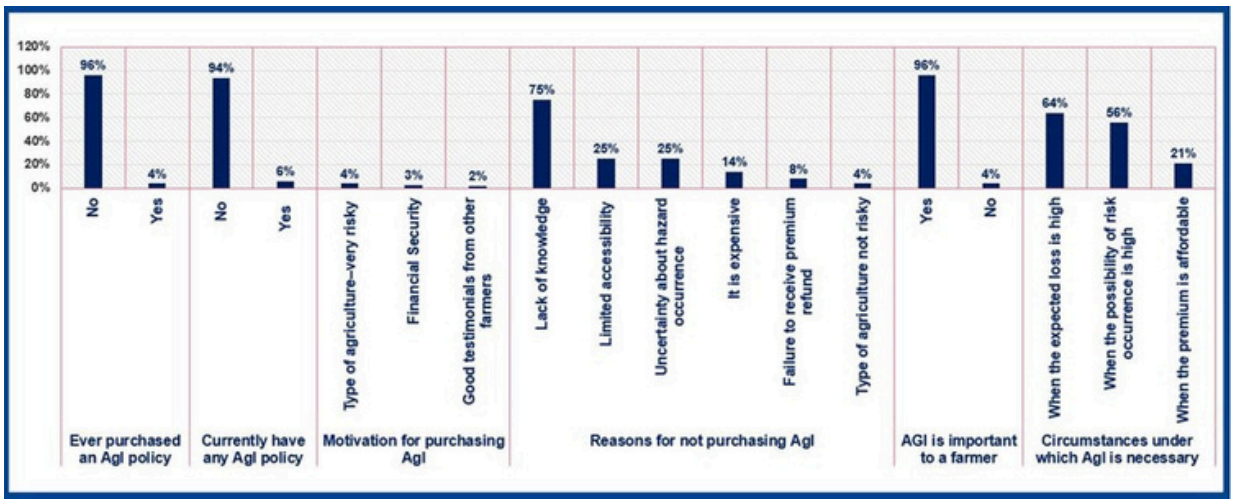
Majority (75%) of the farmers have never heard of agriculture insurance while only 25% had ever had of agriculture insurance. Of those who reported having knowledge on agriculture insurance, majority (38%) had obtained knowledge from television adverts, 28% had obtained knowledge about agriculture insurance from insurance companies, 22% had obtained knowledge about AI from radio, 8% had obtained knowledge about AI from fellow farmers while only 4% had obtained knowledge banks.

4.4 Uptake of Agriculture insurance

The study collected information about agriculture insurance uptake among farmers in Ankole sub-region. The results are presented in figure 9 below.

Figure 9

Knowledge about Agriculture insurance



Source: Primary Data, 2023

The results indicate that majority (94%) of the farmers in Ankole sub-region have never purchased an agriculture insurance policy while only 6% reported having ever acquired an agriculture insurance policy.At the time of study, only 4% had a running agriculture insurance policy with an insurance company while majority (96%) had no any running policy.

The above findings imply that agriculture insurance uptake in Ankole sub-region is very low at only 4%. It was discovered that most farmers who had agriculture insurance were dealing in commercial agriculture including horticultural production such as planting of water melons and passion fruits; commercial poultry production and aquaculture production.
While asked to indicate the motivation for purchasing agriculture insurance, most (4%) of the farmers who had purchased an agriculture insurance policy reported that the type of agriculture they do is very risky, 3% reported need for financial security while 2% reported that they had heard of good experience from other farmers as regards to agriculture insurance.

The study revealed that that the major reason for not purchasing agriculture insurance by farmers is lack of knowledge about agriculture insurance as reported by 75% of the participants. Other reasons for not purchasing an agriculture insurance policy include being expensive (14%), limited accessibility (25%), not certain if the agricultural hazard will happen (25%), failure to receive a refund of premium if the hazard does not happen (8%) and type of agriculture being not risky (4%).
Never the less, the vast majority (96%) of the farmers recognized that agriculture insurance is very important to farmers. This response came after farmers had been explained to how agriculture insurance works. This implies that if all farmers could be sensitized about agriculture insurance, the insurance uptake could improve significantly.

When asked to mention the circumstances under which agriculture insurance could be a necessity to a farmer, majority (64%) of the farmers reported that agriculture insurance is highly important when the expected loss is too huge to bear in absence of insurance. On the other hand, 56% reported that when the type of agriculture is susceptible to agricultural shocks, agriculture insurance becomes a necessity. Further, some farmers (21%) reported that agriculture insurance could be important when the insurance premium is affordable to the farmer.

5.0 Discussions

Majority (75%) of the farmers have never heard of agriculture insurance while only 25% had ever had of agriculture insurance. Television adverts and insurance companies were the most dominant sources of knowledge about agriculture insurance while radio, fellow farmers and banks were not widely used in disseminating information about agriculture insurance. The above findings imply that there are low levels of awareness about agriculture insurance among farmers in Ankole sub region, South western Uganda.

This is in agreement with prior studies by Insurance Regulatory Authority where it was revealed that a significant portion of farmers, who have a lot to gain, have not even heard of agriculture insurance (Muhoozi, 2023). This could be one of the major reasons why most people do not have an agriculture insurance policy. Limited knowledge about agriculture insurance has been confirmed in many studies as one of the major factors affecting uptake of agriculture insurance (Agaba, 2022; Ankrah et al., 2021; Kaunda et al., 2022; Njue et al., 2018; Nshakira-Rukundo et al., 2021; Nyabochwa, 2015; Oino et al., 2012).

This implies that if all farmers could be sensitized about agriculture insurance, the insurance uptake could improve significantly. In this study, the researchers took an initiative to highlight the farmers about agriculture insurance and how it works. After being explained to how agriculture insurance works, the vast majority (96%) of the farmers recognized that agriculture insurance is very important to farmers. This therefore justifies need for more efforts by policy makers and insurance firms in the agro insurance consortium to provide more sensitization of the farmers in rural areas about agriculture insurance especially through the media channels that reach out rural areas such as radios and house-house sensitization programs.

The results indicate that socioeconomic factors have a significant influence on uptake of agriculture insurance in Ankole sub-region, southwestern Uganda. The level of income, level of education and knowledge about agriculture insurance were the most common socioeconomic factors affecting agriculture insurance uptake in Ankole sub-region, southwestern Uganda.

The level of income, level of education and knowledge about agriculture insurance were the most common socioeconomic factors affecting agriculture insurance uptake in Ankole sub-region, southwestern Uganda. The study found that majority (48.0%) of the farmers had studied up to primary level of education. This implies that most farming households in Ankole sub-region have low levels of education and this has an implication on the knowledge and awareness about agriculture insurance. The above findings therefore are in agreement with (Nshakira-Rukundo et al., 2021) who also revealed that low level of education is among the major factors associated with low agriculture insurance uptake among farmers. In addition, nearly 80% of all farmers in Ankole sub-region are in lowest income class earning less than 1,000,000 from agriculture. This may not be sufficient for them to pay insurance claims unless the premium price is significantly low and manageable. Majority (65%) of the farmers in Ankole sub-region survive on agriculture as their main source of income without other sources. Farmers' budget constraints has been found to be a major factor associated with low uptake of agriculture insurance in several studies (Centre for Science and Environment (CSE), 2018; Nshakira-Rukundo et al., 2021).

The results indicate that sociocultural factors have little influence on uptake of agriculture insurance in Ankole sub-region. Uptake of agricultural insurance was not associated with cultural factors such as spousal decisions, religious beliefs, cultural beliefs and personal beliefs. The results therefore do not agree with (Agaba, 2022)'s findings that negative perceptions are one of the reasons for low uptake of agriculture insurance. In this study, the vast majority (96%) of the farmers recognized that agriculture insurance could be very important to farmers under normal circumstances. The results also disagrees with (Harald, 2020; Kaunda et al., 2022; Kislingerová & Špička, 2022) who recommended that having alternative strategies to risk management could reduce uptake of agriculture insurance.

In the current study, farmers did not report any alternative strategy against agricultural risks. This means that the amount of loss they are likely to suffer will be high if they do not acquire agriculture insurance.

The study findings revealed that institutions such as insurance companies, banks and government have a role to play improving the uptake of agriculture insurance. The low uptake of agriculture insurance was largely associated with limited accessibility of agriculture insurance policies of insurance companies by farmers, stringent terms and conditions of insurance companies surrounding agriculture insurance and inadequate creation of awareness on the available agriculture insurance policies by government. Such factors have also been mentioned in other studies. For example, five studies (Agaba, 2022; Ankrah et al., 2021; Kislingerová & Špička, 2022; Nyabochwa, 2015; Oino et al., 2012)all found that farmers' speculation of high cost of premium could limited uptake of agriculture insurance.

In this study also, some farmers reported that they do not have agriculture insurance because of the high premiums charged by insurance firms. The study by Agaba (2022) revealed that farmers are scared by unfavourable agriculture insurance policies that limit them from accessing agriculture insurance. Such a finding does not significantly differ from the current findings that stringent terms and conditions of insurance companies surrounding agriculture insurance limited insurance uptake. Unavailability of agriculture insurance products as reported in several studies (Ankrah et al., 2021; Harald, 2020; Oino et al., 2012) have also been reported by farmers in the current study. Most farmers reported that insurance companies/ agencies with agriculture insurance policy are not accessible in their area.

Prior studies indicate several weaknesses with insurance companies that hinder uptake of agriculture insurance by farmers. Among these include distrust in insurance companies(Harald, 2020; Kislingerová & Špička, 2022; Oino et al., 2012), long procedures in the acquisition of the policy (Nyabochwa, 2015) and too much time taken in processing of claims (Nyabochwa, 2015; Oino et al., 2012). In the current study, farmers were not sure if insurance firms can refund the insurance premium if the hazard does not happen within a specific period. This also shows that farmers have some distrust in insurance companies.

5.1 Conclusions

Despite the significant role of agriculture insurance in reducing agricultural risks, insurance uptake in Ankole sub region, South western Uganda is still low where only 4% of the farmers currently have agriculture insurance. The low insurance uptake is highly attributed to socioeconomic factors such as level of education, level of income and farmers' knowledge about agriculture insurance as well as institutional factors such as lack of awareness programs, low accessibility of agriculture insurance products and terms and conditions surrounding agriculture insurance. Generally, there is low level of knowledge/awareness about agriculture insurance which is at 25% meaning that about 75% of the farmers are not aware about agriculture insurance. Most farmers earn relatively low levels of income given the fact that most of them are in subsistence farming. Most of the farmers have not studied beyond primary level meaning that they lack sufficient knowledge about agriculture insurance published online. Most of the farmers do not even know where to buy agriculture insurance which means that members of the agro insurance consortium have not expanded their services to reach all farmers in rural areas. Nevertheless, majority (96%) of the farmers recognized the importance of agriculture insurance to farmers and are willing to undertake the policy if the limiting factors are addressed.

5.2 Recommendations

Based on the results presented and discussed, it is imperative that farmers receive education and sensitization regarding the significance of agricultural insurance for their farm operations and how it works. Information such as procedure for acquiring agriculture insurance, terms and conditions, premium expenditure, payment plan among others is critical for improve knowledge and awareness about agriculture insurance. Agricultural extension workers or insurers can accomplish this through extensive marketing campaigns. Considering the low level of education among farmers, information in print format should be written in local language such that all farmers who have at least reached primary level of education can read. Media adverts about agriculture insurance should target media channels that are accessible to rural farmers such as radios.

Insurers should locate closer to their market and expand their branch network, particularly in agriculturally prosperous areas, to improve service delivery and increase accessibility of agriculture insurance products. Frequent visits to farms are also essential to support the farmers' education. This improves data collection even more, making it easier to choose the best applicants for effective agricultural underwriting and lowering moral hazard through careful observation.

In order to effectively deliver and uptake insurance, there is a need to improve communication between insurers and farmers. This can be achieved by organizing farmers into farmer groups and meeting them as a group rather than individual. These should be supported be sensitized through regular field days, workshops, meetings, and farm visits.

To consistently meet customer needs, insurers should continue to ask farmers for feedback. Customer focus groups, complaints systems, surveys, and suggestions can all be used to accomplish this.

Insurance companies ought to collaborate with banks and other organizations that finance agriculture. These collaborations will improve service delivery's efficacy and efficiency. For instance, bank employees may be gathering information necessary for insurance underwriting while they evaluate funded agricultural projects. Payment for insurance premiums can be made through banks, and policies can be obtained on bank property. As a result, both parties stand to gain from one another's clientele, and insurance companies can take advantage of the banking industry's comparatively larger branch network.

Insurers can form partnerships with banks to supply liquidity, which banks can then use to advance agricultural finance to farmers, thereby creating a domino effect throughout the value chain. This would increase farmers' ability to produce which increases agricultural output and ultimately agricultural income. Such incomes can be used to pay premiums for agriculture insurance thereby increasing insurance uptake.

In order to manage the delivery of insurance services, insurers must take a customer-oriented approach. The company will be able to concentrate on producing insurance products and services that appeal to customers and meet their needs if it has a thorough understanding of their needs and expectations. Customer surveys, suggestions, complaints systems, and customer focus groups can be used to accomplish this, as previously mentioned.

5.3 Policy Implications

The findings have significant policy implications for the government and policy makers. Enacting legislation and implementing effective regulations is imperative for the government to uphold fair practices and safeguard farmers from exploitation by different players in the insurance sector. It is not feasible for the government to subsidize agricultural insurance or inputs as they formerly did, given Uganda's financial constraints.

To ensure a higher yield and encourage insurance uptake, the government should put in place policies that force farmers to engage in more creative farming practices that can reduce the risk of loss caused by climatic and other hazards.

Such practices can include among others irrigation during dry spell, underground and raised water harvest tanks, planting of trees that can work as wind breaks, application of organic fertilizers, planting of pests and disease resistant plant species, rearing of disease resistant animal species, agricultural extension services, facilitating cattle farmers to adopt supplementary feeding during try season among others.

Currently, these practices are very costly for farmers to adopt without subsidy yet they play a critical role in preventing loss due to agricultural shocks.

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