
**FACTORS INFLUENCING ADOPTION OF AGRICULTURE
INSURANCE: A CASE OF SMALL HOLDER FARMERS IN IMENTI
SOUTH SUB-COUNTY, MERU COUNTY, KENYA**

BY

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Abstract

This research explored the factors influencing the adoption of agriculture insurance by small holder farmers in Imenti South sub-county in Meru Kenya. The objectives of the study were to examine the influence of accessibility on adoption of agriculture insurance by small holder farmers and to determine how farmer training influences the adoption of agriculture insurance by small holder farmers. This study employed descriptive research design and focused on 204 farmers and 30 officers from the 6 wards in the County as the target population. The sample size was 204 respondents, made up of 160 farmers and 30 officials who were randomly sampled based on the 30% rule. Questionnaires, focus group discussions and key informant interviews were used to collect data which was analyzed using appropriate descriptive statistics. The research established that 55% of the farmers had never received training with only 12.5% receiving training often. Lack of information and knowledge by farmers explains the slow adoption of agriculture insurance. Further, half (50% of the respondent farmers noted that there were no insurance firms offering agriculture insurance products within their region. The study recommends that insurance companies should therefore conduct vigorous training to small scale farmers through channels such as radio, television and press, these firms should also take a crop by crop approach to make it easier to train small holder farmers, to develop appropriate products for them and to receive feedback on the issues affecting the uptake of these products by the farmers. In addition, simplification of the policy wordings and documentation will also help increase insurance uptake. Finally, insurance firms should also encourage small scale farmers to form organized groups. Through the groups, the insurance firms will be able to pass relevant information about agriculture insurance to the farmers.

Keywords: Agriculture insurance, small holder farmers, Crop insurance, Premium affordability, Farmer training, Good agricultural practices.

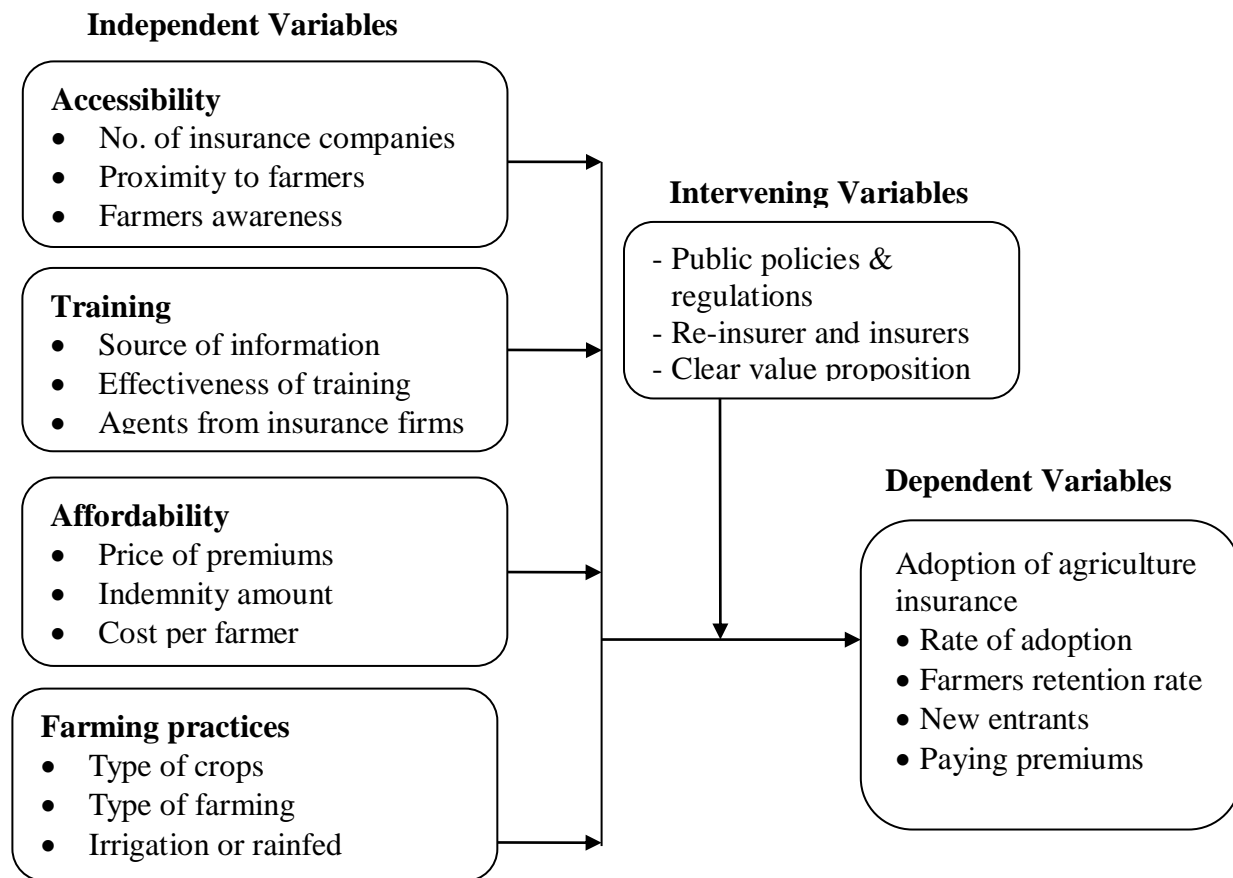
Introduction

About two-thirds of the developing world's 3 billion rural people live in about 475 million small holder farmer households, working on land plots smaller than 2 hectares (Ouweland, 2017).

Many are poor and food insecure and have limited access to markets and services. Their choices are constrained, but they farm their land and produce food for a substantial proportion of the world's population (Rapsomanikis, 2015). Traditionally, small scale farmers in developing nations have managed these risks by diversifying production activities on-farm and income generating activities off-farm. While these mechanisms work well for low-magnitude losses, they often prove to be inadequate for risk that is infrequent but severe (Aidoo et al., 2014). The development of Insurance markets is a strong predictor of economic and sector growth on a macro level. Insurance markets play a critical role in supporting and sustaining growth via risk mitigation – as a risk transfer tool, insurance helps economic actors to protect the economic and social assets they accumulate – at the corporate and household level (Chamberlain et al., 2014). There has been considerable emphasis in development circles on the way insurance markets can contribute to poverty reduction by helping the poor preserve their assets and mitigate the effects of financial shocks, thereby reducing vulnerability (Adinolfi, Capitanio & Enjolras, 2012). There has also been significant effort to promote micro insurance to low-income populations.

Although not so common in the developing world compared to the other strategies mentioned above, agricultural insurance is one way by which farmers can stabilize farm income and investment and guard against disastrous effects of losses due to natural hazards or market prices variability (Aidoo et al., 2014). Agricultural insurance not only stabilizes the farm income but also helps the farmers to initiate production activity after experiencing crop failure (Raju & Chand, 2008). In addition, agricultural insurance models have demonstrated their important role to address crop production risks and climate related disasters (Carter et al., 2014). In China agricultural insurance market grew dramatically to become the second largest market in the world (after the United States) in 2008 (Smith & Glauber, 2012). In India and Mexico, weather based crop insurance has been developed on a large scale to protect farmers against the vagaries of the weather (Food, 2015). According to In gold (2012), failure by small scale farmers to accept, apply and adopt modern farming insurance on their farms so as to promote productivity in the major food production systems has led to very low agricultural productivity and thus the escalating food insecurity and poverty problems in Mexico. Slow adoption rates of Agricultural insurance continue to hinder food insecurity reduction programmes as well other farmers' agricultural economic empowerment initiatives that have been put in place by different government and non-government agencies (Food, 2015). In Kenya like in many other developing countries, agricultural productivity is still extremely low (UNEP, 2015). Increasing agricultural productivity is critical because it will promote high sustainable economic growth, overall economic development and thus ensure the realization of vision 2030 (World Bank, 2011). Unfortunately, agriculture insurance in Kenya has not made much headway because of pre-existing perceptions in the minds of small holder farmers that it is the preserve of the larger scale farmers due to their levels of investment (Kenya Food Security, 2016). Agriculture insurance can be utilized effectively to ensure risks are mitigated and farmers are encouraged to produce more without fear of price fluctuations and losses (Adinolfi, 2012). Therefore, agriculture insurance if customized to specific needs of Kenyan farmers, as conceptualized in figure 1 below:

Figure 1: Interrelationship between the dependent and independent variables.



Agriculture insurance penetration remains exceptionally low in most African countries. Insurance companies usually take long to break even. The capital intensive nature observed in high operating expenses like management costs, salaries, distribution expenses and technology expenses have contributed to delay in the breakeven process. Lack of awareness about the schemes is the single most important reason for not availing agricultural insurance. Exposure to information about insurance as such significantly affects farmers' choices about it.

It is imperative that training in regard to agriculture insurance services be intensive enough to promote adoption not only of improved yield-raising technologies. Farmers learn best from their peers, or those of slightly higher social status and it makes sense that a farmer information channel developed reflects this. Strength of extension educational programs towards crop insurance has a great effect on farmers' acceptance regarding to the research findings. Insurance agents can facilitate the farmers' acceptance process by use of some manners such as present motivate factors, facility factors, confidential factors, supervision factors and diversity factors.

Accessibility and the adoption of agriculture insurance

Acquisition of information about agriculture insurance demystifies it and makes it more of a resource that is within reach to farmers. Information reduces the uncertainty about a technology's performance hence may change individual's assessment from purely subjective to objective over time (Caswell *et al.*, 2011). Exposure to information about insurance as such significantly affects farmers' choices about it. In developing countries, markets for formal insurance and reinsurance are either underdeveloped or non-existent. Apart from the standard reasons for insurance market failure a common reason for its failure in developing countries is the lack of effective legal systems to enforce insurance contracts (Barnett *et al.*, 2006).

Raju and Ramesh (2008) conducted a field survey in Vizianagaram and West Godavari districts of Andhra Pradesh to know farmers' perception about agriculture insurance. Both borrower and non-borrower availing and not availing agricultural insurance service were interviewed for responses. More than three fourth of insurance beneficiaries mentioned that financial security was the motivation for going for insurance (Raju and Ramesh, 2008). Respondents considered bank compulsion as the reason for going for insurance. Among those who have not availed insurance (non-beneficiaries) cited lack of awareness about the scheme the single most important reason for not availing agricultural insurance.

Chaudhury and Kantidas (2014) examined the trends in marketing of new insurance schemes and distribution in Indian life insurance sector. The study noted that life insurance companies globally usually take six to ten years to break even. However, in India, the process has been delayed due to the 2008 financial crisis. More so, the capital intensive nature observed in high operating expenses like management costs, salaries, distribution expenses and technology expenses have contributed to delay in the break-even process. As a result, it was noted that companies have resorted to outsourcing and computerization in order to reduce operating costs.

A survey by Price Waterhouse Coopers (PwC) (2014) noticed that insurance penetration in Africa is exceptionally low. This is reaffirmed by a research conducted on insurance and re-insurance in Africa which indicated that Africa has experienced low insurance penetration as a result of either marginal markets or absence of life insurance industry (African Re-Insurance Corporation, 2013). More so, it is noted that insurance penetration rates in East Africa Community countries is low as a result of underdeveloped insurance markets couple with inadequate legal infrastructure within the three countries and underdeveloped banking and capital markets which inhibit the growth of the insurance sector. However, it is noted that the African insurance market is growing rapidly with premium growth being projected for countries (PwC, 2014).

Ochieng (2013) evaluated banc assurance as a strategy for penetration in Kenya. Prior to banc assurance, it was noted that costs such as the sales costs would force insurance channels to charge uncompetitive premiums and therefore lose on customers. Further, high product prices and administrative costs of offering micro insurance also hindered development of micro

insurance. In the study however, it was noted that combining bancasurrer's business with other business of the insurer can reduce economies of scale in administration costs which in turn enables the insurer to not only increase profitability but also offer competitive prices for products (Ochieng, 2013).

Farmers' awareness of agricultural insurance and its effects on their income would be the biggest support to agriculture insurance (Baker, 2009). Background exposure risk is one of the most important factors in accepting agriculture insurance. Empirical studies provide information that argues that micro insurance is more or less supply-driven rather than demand driven especially for the poor and thus the insurance products which would benefit the poorest are still at a limited stage of development. Institutional innovations and new insurance products therefore require large resource investments to develop and intensive promotion (Mosley, 2009)

Farmer training and the adoption of agriculture insurance

It is imperative that training in regard to agriculture insurance services be intensive enough to promote adoption not only of improved yield-raising technologies, such as improved seeds, but also of fertility-restoring and conservation technologies (Mahul and Stutley, 2010). One of the most discernible features around credit in most sub-Saharan African countries is the lack of an educational package linked to credit for small rural producers (Anderson and Lien, 2012). Farmers learn best from their peers, or those of slightly higher social status (Feder & Savastano, 2006), and it makes sense that a farmer information channel developed reflects this.

Akinola (2014) study analyzed the determinants of poultry farmers' adoption of agricultural insurance in Abeokuta metropolis of Ogun state, Nigeria. The purposive sampling technique was used to select 80 poultry farmers for the study. Findings showed that only 46% of the farmers were aware of the agricultural insurance policy and only 44% have adopted. Farmers' adoption of agricultural insurance was expected to increase with increase in formal and extension education, higher level of awareness of insurance policy, more perception and concern for past experience with risk and less indifference resulting from too much confidence in their years of experience and alternative risk management strategies (Akinola, 2014).

Ghalav and *et al.* (2012) studied the factors that influence up take of agriculture insurance as a risk management strategy are young farmers with higher level of education, higher wheat crop area, more income and better communication with other farmers, insurance agents and agricultural extension workers could affect decision making of the other farmers. Based on the findings, farmers consult with each other which have very important role on their decision making towards crop drought insurance adoption. Simultaneously, strength of extension educational programs towards crop insurance has a great effect on farmers' acceptance regarding to the research findings. Insurance agents can facilitate the farmers' acceptance process by use of some manners such as present motivate factors, facility factors, confidential factors, supervision factors and diversity factors.

Kumar *et al.* (2011) conducted survey on 600 farmers to assess their perception about various facets of crop insurance schemes. The Probit and To bit models were employed to analyze the factors affecting awareness among the farmers. Crop diversification index has also been used to examine the farmers' adjustment mechanism against risks. The survey revealed that most farmers were aware of risk mitigation measures of the government. But, only half of the farmers have been found aware about the crop insurance schemes/products.

Statement of the Problem

Adoption of agriculture insurance as a risk management tool in Kenya has remained low caused by various factors which include lack of proper knowledge, understanding and awareness by the intended consumers, and high cost of premiums. Uptake of agriculture insurance has been low, with one of the main bottlenecks identified as low awareness. Low-income households are more exposed to risks and less able to deal with them; they often manage these risks through strategies that are expensive and inefficient (Dercon & Christiaensen, 2007). Dragos and Mare, (2014) have advocated the best way to overcome all the threats to agricultural sector and to improve rural welfare through agricultural or crop insurance. Kwadzoet *al* (2013) contended that market-based crop insurance is the most effective management tool farmers can use in today's agriculture industry where the degree of uncertainty is highly associated with high losses. Most farmers have resolved to producing just enough for their household with minimal investment in risk hedging strategies (Bhende, 2012). Yet with a vision to end hunger at a national level, subsistence farming cannot be a solution into the future. Therefore, a solution has to be found, and risks adaptation and mitigation promoted to increase farm investments and hence production in line with SDG 2. This study will attempt to determine the factors influencing the adoption of agriculture insurance among small holder farmers in Imenti South, Meru County.

Research Objectives and Research Questions

1. To examine the influence of accessibility on adoption of agriculture insurance by small holder farmers in Imenti South, Meru County, Kenya.
2. To determine how farmer training influences, the adoption of agriculture insurance by small holder farmers in Imenti South, Meru County, Kenya.

In order to achieve these objectives, the study was guided by the following research questions;

1. How does accessibility influence adoption of agriculture insurance by small holder farmers in Imenti South, Meru County?
2. How does farmer training influence adoption of agriculture insurance by small holder farmers in Imenti South, Meru County?

RESEARCH METHODOLOGY

Research Design

This study employed descriptive research design. In this design the researcher used both qualitative and quantitative research methods in order to enrich the content of the findings. Quantitative methods involved the use of questionnaires to get information pertaining adoption of insurance from small scale farmers. Qualitative approach was used to collect data by use of key informant interviews (KIIs) from different insurance officers.

Target population

Imenti South sub-county is located in the Eastern part of Kenya in Meru County. The sub county has a total of 47,197 households (KNBS, 2013). The main cash crops and source of income are tea and coffee. Most farmers are engaged in subsistence farming of crops such as sorghum, maize, beans and fruits. The sub county has a total of six wards which are Abogeta West Abogeta East, Nkuene Igoji West, Igoji East and Mitunguu.

Sample Size

Sample size is a means of determining the number of elements of the population to be included in the sample (Creswell, 2013). The study used Krejcie and Morgan table to determine sample size of 204 respondents.

Table 1: Sample Size

Wards	Sample size
Abogeta West	34
Abogeta East	34
Nkuene	34
Igoji West	34
Igoji East	34
Mitunguu	34
Total	204

Research Instruments

The study used the following research instruments in collecting data; questionnaire, key informant interview and focused group discussions. The questionnaires had closed-ended questions using both multiple choice and likert scale questions. Questionnaires were filled through interviewing and filling in the responses by the researcher and their assistants.

Research Findings and Discussion

The questionnaires were distributed to 204 respondents in Abogeta West, Abogeta East, Nkuene, Igoji West, Igoji East and Mitunguu wards in Imenti South, Meru County. The questionnaires targeted small scale farmers within the area of study. Only a total of 160 questionnaires were fully filled making a response rate of 78.4%. The response rate is in line with Mugenda and Mugenda (2003) who suggested that for generalization a response rate of 50% is adequate, 60% is good and a response rate of 70% and over is excellent for analysis and reporting.

3.1. Research question 1: What is the influence of accessibility on adoption of agriculture insurance by small holder farmers in Imenti South, Meru County?

The first objective of the study sought to determine the influence of accessibility on adoption of agriculture insurance by small holder farmers in Imenti South, Meru County. Accessibility is one of the ways of ensuring that services are readily available to the consumers (small scale farmers). When the insurance firms are accessible, the farmers are able to get information on services provided. Acquisition of information about agriculture insurance demystifies it and makes it more of a resource that is within reach to farmers (Caswell et al., 2011). The respondents were asked to indicate the number of insurance firms in their area. The number of firms in the respondents' specific area would be interpreted to mean their readiness to provide the services to the small scale farmers. Table 2 summarizes the findings.

Table 2: Insurance firms

Insurance firms	Frequency	Percent
None	80	50.0
Between 1-2	70	43.8
Between 2-5	10	6.3
Total	160	100.0

Half of the respondents (50%) indicated that there were no insurance firms within their region. A total of 43.8% indicated that there were between 1-2 firms while 6.3% indicated there were between 2-5 firms.

The key informant interview confirmed the information given by small scale farmers as the insurance officers indicated that there were inadequate insurance firms in the county. They however added that the insurance firms mainly targeted the large scale farmers in the sub county. One officer pointed out that "small scale farmers are rarely considered. The organization mainly considers large scale farmers and farmers in organized groups". The findings show the insurance firms unreadiness to sell the agriculture insurance policies to small scale farmers. The findings agree with a survey by Price Waterhouse Coopers (PwC) (2014) that insurance penetration in Africa is exceptionally low.

The respondents were required to indicate the extent to which the given statements on

accessibility influenced their decision not to adopt agriculture insurance. They were to rate on a scale of 1-5 where 1=no extent, 2=little extent, 3=moderate extent, 4= great extent and 5= very great extent. The response is summarized in Table 3.

Table 3: Influence of accessibility on adoption of insurance

Accessibility	Mean	Std. Dev
No insurance institution in proximity	3.6187	1.5776
There are few insurance firms in our area	3.8187	1.6053
I am not aware of agriculture insurance	3.2125	1.4025
There are no insurance firms willing to cover small scale farmers	3.3563	1.2354
Crop insurance is not relevant due to low yield	2.4563	1.4312
I have no time to visit any insurance firms	4.1625	1.4916

Many respondents indicated that to a great extent they had no time to visit any insurance firms (mean=4.1625, SD=1.4916), there were few insurance firms in their area (mean=3.8187, SD=1.6053) and no insurance institution in proximity (mean=3.6187 1.5776). The respondents indicated to a moderate extent that there were no insurance firms willing to cover small scale farmers (mean=3.3563, SD=1.2354), they were not aware of agriculture insurance (mean=3.2125, SD=1.4025). They indicated that to a low extent crop insurance was not relevant due to low yield (mean=2.4563, SD=1.4312). From the Key Informant Interview (KII) with the insurance officers, it became clear that very few small scale farmers were aware of agriculture insurance in the area. Some even indicated that the small scale farmers were not aware of agriculture insurance products available in their respective area. They further indicated that the farmers were willing to insure their crops and livestock once trained. The KII also showed that the insurance companies were not willing to spend their resources training farmers as the return on investment was very minimal. The findings agree with Kumar *et al.* (2011) that half of the farmers have been found aware about the crop insurance schemes/products. Findings also agree with Baker (2009) that farmers’ awareness of agricultural insurance and its effects on their income would be the biggest support to agriculture insurance.

Research question 2: How does farmer training influence adoption of agriculture insurance by small holder farmers in Imenti South, Meru County?

The second research objective sought to determine the influence of training on adoption of insurance by small holder farmers in Imenti South, Meru County, Kenya. Training creates

awareness on existence of products and services in addition to providing information on its acquisition. Farmers’ awareness of agricultural insurance and its effects on their income would be the biggest support to agriculture insurance. In measuring the influence of training on the adoption of insurance by small holder farmers, the researchers focused on the frequency and intensity of the training delivered. The respondents were asked to complete the questionnaire indicating how often they received trainings. They answered as indicated in Table 4.

Table 4: Frequency of trainings

Frequency of training	Frequency	Percent
Never	88	55.0
Rarely	52	32.5
Often	20	12.5
Total	160	100.0

Many respondents (55%) had never received training, 32.5% rarely received training and 12.5% received trainings often. This implies that the small scale farmers in Imenti South Sub-county do not receive training from insurance companies. This could explain the slow adoption of agriculture insurance by small scale farmers in the area. Through the KIIs, the insurance officers revealed that they conducted training on agriculture insurance. They however added that the trainings conducted by insurance companies mainly targeted large scale farmers and small scale farmers in organized groups. The results are in line with Anderson and Lien, (2012) that lack of an educational package affects products/services choice and uptake by small scale rural producers.

Further, the respondents were asked to indicate the extent to which training influenced their decision to adopt agriculture insurance. They were to rate on a scale of 1-5 where where 1=no extent, 2=little extent, 3=moderate extent, 4= great extent and 5= very great extent. It was assumed that the higher the number of trainings, the higher the likelihood of small holder farmers registering for the policy. The findings are indicated in Table 5.

Table 5: Influence of training on adoption of insurance

Trainings	Mean	Std. Dev
Poor awareness about the details of insurance schemes	4.6813	0.5867
Inadequate knowledge on benefits of agriculture insurance	4.0125	1.0639

Lack of trained personnel from insurance firms	3.8250	1.1845
Conflicting information from fellow farmers	3.0750	1.8413
I receive training but I do not understand the need of insuring crops	2.9875	1.6444

Many respondents indicated that to a very great extent adoption of insurance was influenced by poor awareness about the details of insurance schemes (mean=4.6813, SD=0.5867). Inadequate knowledge on benefits of agriculture insurance (mean=4.0125, SD=1.0639) and lack of trained personnel from insurance firms (mean=3.825, SD=1.1845) influenced adoption of agriculture insurance to a great extent. Conflicting information from fellow farmers (mean=3.075, SD=1.8413) and receiving training and not understanding the need of insuring crops (mean=2.9875, SD=1.6444) influenced adoption of agriculture insurance to a moderate extent. Through the KIIs the insurance officers indicated that the training conducted influenced the farmers' willingness to adopt agriculture insurance. The training was however significant to large scale farmers whose adoption to agriculture insurance was high. The study findings are in line with Caswell et al., (2011) that exposure to information about insurance as such significantly affects farmers' choices about it. The results also concur with Akinola, (2014) that farmers' adoption of agricultural insurance is expected to increase with increase in formal and extension training.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The study has established that there are limited insurance firms serving small scale farmers in rural areas in Kenya. The insurance firms have particularly not readied themselves for products to suit small holder farmers. Insurance firms mainly target the large scale farmers and rarely consider small holder farmers. Very few small holder farmers are aware of agriculture insurance. Insurance companies are however not willing to spend a lot of money training farmers as the return on investment is very minimal.

The study also concludes that insurance companies rarely offer training to small holder farmers. The trainings offered by insurance firms focus on large scale farmers as well as farmers in organized groups. It is very hard to have small scale farmers organize themselves in groups except in cases of Village savings groups and 'chamas' which are mainly done by women. Small scale farmers do not access training on agriculture insurance hence the low adoption among the small holder farmers.

Recommendations of the study

Based on the findings, this study comes up with the following recommendations;

- i. Insurance companies should consider introducing new branches in rural areas in Kenya. The companies may also employ more insurance officers to improve reach of small holder farmers.
- ii. Insurance firms should encourage small scale farmers to form organized groups. Through farmer groups, insurance firms will better be able to pass relevant information about agriculture insurance to the farmers.
- iii. Since most small holder farmers are not part of organized groups, insurance companies should therefore train small scale farmers through other channels such as radio, television and the press.
- iv. Insurance companies should also take a crop by crop approach to make it easier to train small holder farmers, to develop appropriate products for them and to receive feedback on the issues affecting the uptake of these products by the farmers.
- v. Training farmers on policy wordings as well as simplification of the policy wordings and documentation will also help increase insurance uptake.

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