



## Case Study

# Factors affecting adoption of livestock insurance: a case study of livestock farmers in Manzini Region, Swaziland

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Available online at: [www.isca.in](http://www.isca.in)

Received 11<sup>th</sup> May 2017, revised 25<sup>th</sup> July 2017, accepted 6<sup>th</sup> August 2017

## Abstract

*The agriculture sector is a pillar of the growing economy of Swaziland and an important source of employment for rural households with majority of the population being dependent on this sector for income. However, different studies have shown that agriculture, particularly livestock farming, is more sensitive to climate change in Swaziland. To mitigate the plight of livestock farmers, some risk minimizing attempts have been introduced such as livestock insurance. The present objective of the study was to determine the factors that affect adoption of livestock insurance in the region. Primary data was collected by using self structured and well designed questionnaires through face to face interviews. The results of the present study revealed that 88% of the interviewed farmers had knowledge on livestock insurance but only 6% have adopted the livestock comprehensive policy. Factors that were identified to have more influence on the acceptance of livestock insurance by farmers were awareness on insurance, farming experience and farm diversification. Results also indicate that the major risks that livestock farmers face in Swaziland were revealed to be theft, drought and lightning. Agribusinesses are faced with major risks that are usually beyond their control, insurance is a mitigating tool that farmers need to adopt to protect their businesses and stay financially stable.*

**Keywords:** Adoption, Livestock insurance, Cattle, Livestock farmers, Logit regression.

## Introduction

The agriculture sector contributed 11.9% to the country's Gross Domestic Product (GDP), while the agricultural activities practised on Swazi Nation Land (SNL) contributed approximately 5% of the country's GDP<sup>1</sup>. It also provides employment for approximately 70% of the population. The contribution of the agriculture to the country's GDP indicates that there is a significantly lower productivity than the non-agricultural, although it employs the majority of the population. The reason for the agriculture sector is drought and unpredictable weather<sup>2</sup>.

Omari, climate changes resulting in frequent and long lasting droughts, floods, hailstorms and other changes in the variables of weather have become a common problem all over the world, including Swaziland<sup>3</sup>. He further highlighted that, this in turns affects crop production, forestry and livestock due to climate risks which include changing weather patterns, pests, diseases and the fluctuating prices of agricultural products in the market place<sup>3</sup>. The significant risks faced by the agriculture sector and the significance impact of these risks on growth and rural welfare has placed attention on the risk, and lifted the management of risk to a place of priority with regards to interventions to catalyse the agriculture sector<sup>4</sup>. Consequently, the development of innovative intervention for managing specific of the agricultural risk including weather- related risk

has been realised. These, insurance products seek to address the risks that livestock commercial farmers are exposed to.

**Livestock production in Swaziland:** Thompson reported that the livestock was 14% of agricultural output, and 1% of Swaziland's GDP<sup>1</sup>. Among the different livestock species that are kept in Swaziland, cattle are of paramount importance<sup>5</sup>. This is evidenced by the large number of rural households that own cattle and by the existence throughout the country of relatively organized markets for cattle. Livestock is an important livelihood asset for the rural societies in Swaziland. People derive their livelihood from livestock in the form of income, food, organic fertilizer, etc.<sup>6</sup>. Climate change affects the natural environment which affects the water resources, land and pastures, biodiversity and livestock health<sup>7</sup>. This has direct and effect on livestock production and livestock system and shows that there is a need for livestock farmers to pay for livestock insurance.

**Livestock insurance in Swaziland:** Livestock insurance is cover taken out by farmers and commercial owners of livestock which provides a lump sum amount to the insured if an animal listed in the policy dies from one of the perils specified in the contract<sup>8</sup>. There are two insurers offering agriculture insurance in Swaziland at present; The Swaziland Royal Insurance Corporation (SRIC) and Lidwala Insurance Company. The Swaziland Royal Insurance Corporation was introduced in 1973

by King's order in the council and the Lidwala Insurance Company; a privately owned company started operating in 2009. Both insurers offer Livestock Comprehensive Insurance.

The Lidwala Insurance Company offers the livestock comprehensive policy. It is made for individuals and organisations that are into domestic livestock farming. The range of domestic livestock animals they cover includes cattle, goats, pigs and sheep. The policy covers livestock against fire, lighting, explosion, electrocution, pitfall, impact, malicious damage, non-political riot, specific diseases including red water fever, heart-water fever, gall sickness, tuberculosis (TB) to name a few. Lidwala also has other optional covers which include livestock in transit and theft or straying<sup>9</sup>. The SRIC Company also offers livestock Insurance which covers against diseases such as gall fever, red-water fever, heart-water fever, infertility due to visible accident, infertility as a result of accident, sickness and disease, and livestock in transit<sup>10</sup>. The main objective of the present study is to identify the main important factors that affect adoption of livestock insurance of farmers in the study region.

#### **Literature Review: Livestock production in Swaziland:**

Swaziland is basically a livestock keeping country with grazing land accounting for 64% of the available land. Although it is small in size, the country has 4 major agro-ecological zones, namely the Highveld, Middleveld, Lowveld and the Lubombo plateau. Its climatic environments range from sub-humid and temperate in the Highveld to semi-arid and warm in the Lowveld. The vegetation ranges from short to tall grassland with forest patches, scattered trees and shrubs to broad leaved acacia and plateau savannah<sup>11</sup>.

According to the Ministry of Agriculture there is a wide range of farm animal genetic resources in the country, the main ones being cattle, goats, pigs, poultry, and sheep, to a lesser extent, equines. The role of these livestock resources in Swaziland cannot be overemphasised. Livestock constitute an important sub-sector within the country's agriculture, accounting for some 26% of the total agriculture gross domestic product and also impact on a large number of households and people, constituting an integral part of the food security and sustainable livelihood. Livestock provide draft power and manure, and are used to meet a host of social and cultural obligations<sup>5</sup>.

**Commercial vs. traditional livestock farming:** Thompson, the livestock production is the major activity in the rural areas and there are 2 predominant livestock production systems: the traditional and commercial sectors. The traditional or smallholder sector is maintained on Swazi National Land (SNL), which is essentially land held under communal tenure. It accounts for 85% of cattle, 95% of small ruminants (mainly goats) and 92% of equines maintained on communal grazing areas. The sector also supports 81% and 68% of the pig and poultry populations, respectively. The commercial sector on the other hand is maintained on Title Deed Lands (TDL) consisting

of large-scale estates and medium to smaller-sized farms. It is dominated by a few large ranches and accounts for 15% of the national cattle herd<sup>12</sup>.

The country's Livestock Development Policy calls for the commercialisation of livestock development through the promotion of smallholder livestock production enterprises, introduction of cost-recovery programmes (removal of subsidies), promotion and marketing of produce and capacity building through training and research<sup>13</sup>.

Some of the primary constraints to increased livestock productivity in Swaziland are lack of genetic improvement of indigenous farm animal genetic resources, poor breeding practices and use of improved genotypes in ways that do not exploit the positive genotype-environment interactions<sup>5</sup>.

**Livestock insurance:** Livestock insurance is one of several risk mitigation strategies that have been designed to reduce the variability of farm income<sup>14</sup>. Livestock insurance can be defined as a financial instrument used by insurance companies to buy potential risks from farmers in return of premiums<sup>2</sup>. This type of speciality insurance protects farmers from economical loss from the death of animals resulting from various defined perils including disease, heat stress, theft, machinery breakdown, fire, flood and earthquake. Jarvie and Nieuwoudt mentioned that the insurance as the elimination of the uncertain risk of loss for the individual through the combination of a big number of similar exposed individuals who each contribute premium payments adequate to make good the loss caused to any one individual<sup>15</sup>. Thus, the idea behind insurance is that of risk pooling, which involves combining the risks faced by a larger number of individual/farmer who contribute through premium payments to a common grant or fund that is used to cover the losses incurred by an individual in the pool<sup>16</sup>. In general, insurance will provide security against adverse economic losses experienced by individuals and firms, and caused by the natural phenomena such as fire, hail, theft and floods. The important decision to join any insurance against risk in agriculture should be an economic one. In making that decision, requires the attention on the following critical issues: i. How much loss can the farmer withstand without insurance? ii. What are the trade-offs between insurance costs and potential losses<sup>17</sup>?

Thus the insurance is more important and attractive to risk-averse farmers and in circumstances where risks warrant paying a premium more than the expected financial damage without adoption of insurance<sup>16</sup>.

**Importance of livestock insurance:** The livestock sector, however, as already observed, are subject to a considerable element of uncertainty arising from death, disease, or depreciation caused by sickness or accident<sup>18</sup>. The author further stated such uncertainties induce substantial income risks, and these can be particularly detrimental to small and poor producers in developing countries. All of these circumstances

brutally affect farmers through loss in production and farm income, and these circumstances are beyond farmer's control.

With the growing commercialization of agriculture, the magnitude of loss due to not favourable eventualities is growing. Livestock losses are often met by farmers through borrowing from banks, co-operative credit societies or private moneylenders, and occasionally through loans or grants from the Government<sup>8</sup>. Bowler describes the following benefits of livestock insurance. First, it guarantees an automatic protection (subject purchase of insurance and payment of premiums) to farmers against loss of their stock from accident or disease and thereby helps to stabilize their income. Secondly, it raises their credit worthiness. Third, it serves as an effective means of reducing risks to their livestock as the insurers often take an active part in preventing or reducing the chances of accident or illness to animals accepted for insurance and last, it helps, through prompt treatment or replacement of the diseased or lost animals, to maintain the productive activities of farmers<sup>18</sup>.

**Livestock insurance in Swaziland:** In Swaziland, agricultural insurance package was first introduced by the Lidwala Insurance Company in the year 2011 targeted to both small and large commercial farmers. This agricultural insurance was a package consisting of Livestock Comprehensive Policy, Sugarcane Protection Policy and Farm Comprehensive Policy Covers<sup>19</sup>. He further said that the introduction of this package was along the company's main motivation to continuously drive growth by diversifying its portfolio through the introduction of tailor-made and customer relevant products<sup>19</sup>. Lidwala Insurance Company was the first company in the country to come up with such an insurance policy.

**Livestock comprehensive policy:** Msibi livestock comprehensive policy covers includes all kinds of domestic animals ranging from cattle, sheep, and goats among others<sup>19</sup>. The policy comprises of fire, diseases and transit sections. Regarding fire, it covers loss of an animal as a result of perils such as fire, lightning, explosion, electrocution, malicious damage and riot. The disease aspect of the policy is specifically designed for those who wish to cover loss of their cattle against specific diseases but excluding pandemics such as foot and mouth and anthrax, while the transit section covers loss or injury to the insured animals while on transit, including theft.

**Risk in the agriculture sector:** Kahan, reported that farmers live with risk and make decisions every day that affect their farming operational activities. Most of the factors that affect the conclusions that farmers make cannot be predicted with 100%rightness: weather conditions; prices at the time of harvest could drop; hired labour may not be available on time; machinery and equipment could break down when needed; draught animals might die; and government policy can change overnight and all these changes are examples of the risks that farmers face in managing their farm as a business and all of these risks affect their profitability or income<sup>20</sup>.

Wenner and Arias stated that risk is an unavoidable but a manageable element in the agricultural sector<sup>21</sup>. Due to the accelerating global warming and effect of greenhouse, there is an increase in the occurrence weather related disasters. Dinler also claimed that natural risks lead to substantial financial losses. These losses, if prevented significantly, can improve agricultural yield and help to improve the economic scenario. This is not only by the farmers but other segments in the farmer's society that really suffer from these losses<sup>22</sup>. Recent climate changes and unplanned infrastructural developments in rural areas can trigger more severe floods and droughts.

European Commission study grouped the agricultural risks in two major groups as follows<sup>23</sup>: i. Price risks: The most noteworthy price risks occur when agricultural trade is subject to free – competition. Liberalization is seemed as one of the significant risks by the farmers. Higher yields will also reduce prices and reduce the profit margins. ii. Production risks: Production risk is defined as any risk that can lead to lower agricultural produce, such as pests, diseases and misappropriation of some new researches and developments.

Hardaker et al. categorized the most important agricultural risks as follows<sup>16</sup>:

**Human or Personal Risk:** The agriculture field is a labour-intensive sector; therefore the farmer's health is extremely important. i. **Asset Risk:** This risk is associated with fire, theft and other damages to property. Loss of equipment, such as tractor may add to the productivity production costs. ii. **Production or Yield Risk:** This risk comprises weather-related risks as well as crops and animal diseases. iii. **Price Risk:** This risk is associated with economic fluctuations/deviations that might pull the prices below a significant profitability level. iv. **Institutional Risk:** This institutional risk is based upon the policy changes which affect the agricultural sector. Since subsidies form a crucial share of the farmer's income, policy changes that lead to cut-down in subsidies can have negative impacts on farmer's income.

**Financial Risk:** This financial risk is linked with the possible change in interest of a mortgage, inadequate liquidity and loss of equity.

## Methodology

**Research design:** The present study was based on descriptive research design with quantitative and qualitative approach. This approach was used to describe variables rather than to test a predicted relationship between variables. This research design was used because it gives the ability to collect unbiased data and provide a clear image of the phenomenon under study<sup>24</sup>.

**Study area:** The study of factors influencing adoption of livestock insurance by livestock farmers was conducted in the Manzini region of Swaziland. The study region is the central

part of the country, cover the Highveld, Middleveld and down to the Lowveld. Its highland areas include the forestry town of Mhlambanyatsi and the beautiful Ngwempisi Gorge cutting through the Ntfungulu Hills<sup>25</sup>. Manzini region is located in the centre-west of the country, and it has an area of about 4,093.59 km<sup>2</sup>. The region has a population of about 319,530, and is classified into 9 locations<sup>26</sup>. The region was therefore selected because it has been the centre of many agricultural development activities in recent years moreover the region is divided into wet and dry lands which makes it most suitable for both crop production and animal raising.

**Target population and sampling technique:** The target population is commercial livestock farmers in the Manzini region. A two stage probability sampling technique involving stratified and snowballing sampling was used to draw a sample of 50 farmers using the Van Dalen method of determining sample size<sup>27</sup>.

The Manzini region is made up of 16 Tinkhundla centres therefore it was divided into 16 stratus and 6 stratus were purposively selected. The six selected stratus were as follows: i. Mahlangatja, ii. Emkhiweni, iii. Mafutseni, iv. Nhlambeni, v. Manzini North, vi. Manzini South.

Using snowballing sampling technique, a sample of farmers was selected from each of the above stratus.

To determine the factors that affect adoption of livestock, a Logistic Regression model was used to analyse the factors where the dependant variable Y represent insured and non-insured, so;

$$\text{Model: } \ln(\pi / (1 - \pi)) = \beta_0 + \sum \beta_j X_{ij}$$

Where,  $\pi$  is the probability of the  $i^{\text{th}}$  farmer being insured and  $X_j$  the  $j^{\text{th}}$  explanatory variable. The dependent variable,  $\ln(\pi / (1 - \pi))$  is the log-odds ratio in favour of purchasing livestock insurance according to Gujarati<sup>28</sup>.

$X_1, \dots, X_9$  were the independent variables, representing the different factors affecting adoption of livestock insurance.

$X_1$ - Age,  $X_2$ - Farmer's educational level,  $X_3$ - Farmer's awareness,  $X_4$ -Farming experience,  $X_5$ - Farmer turnover,  $X_6$ - Premium price,  $X_7$ - Off farm income,  $X_8$ - Farm diversification and  $X_9$ - Farm Size.

$\beta_1$  to  $\beta_9$  are the coefficients of the different independent variables that determine the extent to which the variable influences the probability that are adopt to insurance or not.

## Results and discussion

In the present analysis of demographic characteristics of the farmers, described the risk faced by the farmers, farmers failed to mitigate the risk. In this section also described the knowledge and source of knowledge about the livestock insurances.

**Age distribution of respondents:** Table-1 shows that 4% of the farmers were between the ages of 25 – 34 years, 22% were aged 35 – 44 years, 36% were between the ages of 45 - 54, 38% were aged 55 and above. Average age of the farmer was 51 yrs.

**Table-1:** Age distribution of respondents (Livestock Farmers).

Age group (years)	Frequency	Percentage (%)
25 – 34	02	04
35 – 44	11	22
45 – 54	18	36
55& above	19	38
Total	50	100
Mean Age:51.06	Standard Deviation: 09.88	

**Gender distribution:** Table-2 shows the gender classification of the interviewed livestock farmers. It reveals that the majority of the farmers were the male with 94% and the female were 6% of the total respondents.

**Table-2:** Gender distribution of respondents (Livestock Farmers).

Gender	Frequency	Percentage (%)
Male	47	94
Female	03	06
Total	50	100

**Distribution of educational level of respondents:** Education broadens the level of thinking of an individual, and enhances decision making when it comes to issues of his business and personal life<sup>29</sup>. As outlined in Table-3, it was found that most of the farmers were only able to attain high school education (46.0%) followed by those who attained tertiary education (24.0%), and 22.0% had attained primary education of interviewed farmers.5% of the farmers never got any form of education, meaning they never went to school. Garrido and Zilberman disclosed that education provides the privilege to acquire better skills as well as adoption of innovation among people<sup>30</sup>.

**Distribution of farming experience in years:** Table-4 shows the level of experience on farm life by the farmers. It depicts that most farmers interviewed, 28%, had farm experience ranging from 5-9 years running their farms, followed by farmers with an experience of 10 – 14 years at 26%. 24 % of the farmers had a farming experience of 15 – 19 years, 18% had an experience above 19 years and 4% had experience less than 5 years.

**Table-3:** Distribution of Education level of the respondent farmers.

Educational level	Frequency	Percentage (%)
Tertiary	12	24
High School	23	46
Primary	11	22
Other	04	08
Total	50	100

**Table-4:** Distribution of farming experience in years.

Farm Experience	Frequency	Percentage (%)
Less than 5	02	04.0
5 – 9	14	28.0
10 – 14	13	26.0
15 – 19	12	24.0
20& above	09	18.0
Total	50	100

**Risks faced by the farmers and farmers failed to mitigate the risks:** Table-5, shows the risks faced by farmers in order of occurrence. The results indicate that the risk that was ranked the highest occurring amongst farmers was theft at 40%, followed by drought at 30% and then lightning at 20%. The least occurring of the risks was disease outbreak at 18.3%. Evidently enough, all the farmers have faced or encountered risks in their farm operations and this is an indicator that livestock insurance is needed for farmers to be able to mitigate these risks.

**Table-5:** Distribution of risks faced by farmers.

Risk Faced	Frequency	Percentage (%)
Theft	20	40
Drought	15	30
Lightning	10	20
Disease Outbreak	05	10
Total	50	100

Table-6 shows risks that farmers failed to mitigate. The results indicate that in almost all the risks farmers faced, they failed to

mitigate them hence the need for risk management tools like livestock insurance.

**Table-6:** Risks failed to mitigate.

Risk Faced	Frequency	Percentage (%)
Theft	20	40
Drought	15	30
Lightning	10	20
Disease Outbreak	05	10
Total	50	100

**Awareness/ knowledge on livestock insurance:** Table-7 shows results on the awareness of livestock insurance by livestock farmers. From this study, it was proven that 88% of respondents were both aware but not subscribed livestock insurance and 6% aware and subscribed and remaining respondents were not aware about livestock insurance. A majority of the farmers indicated that the knowledge they have on the availability of livestock insurance was not adequate enough for them to decide whether to purchase livestock insurance or not. This means that farmers want to know more information on insurance in order for them to make an informed decision.

The medium of communication that is used to pass information to farmers is very much important because it determines the target audience that will be reached, and the amount of information included. Out of the total farmers that know about livestock insurance, 48% of them got to hear about it through the media, radio, billboards and newspapers and 30% of them through friends and only 12% of the farmers got the information through extension workers. 10% of the total interviewed farmers got to hear about livestock insurance from insurance agents.

**Table-7:** Distribution of the awareness and source of awareness of livestock insurance.

Parameter	Frequency	Percentage (%)
Awareness on insurance		
Not aware	03	06
Aware and subscribed	03	06
Aware but not subscribed	44	88
Total	50	100
Source of Awareness		
Media	24	48
Friend/Farmer	15	30
Extension worker	06	12

Insurer agent	05	10
Total	50	100

**Factors affecting adoption of livestock insurance:** The results presented in this section show the factors affecting adoption of livestock insurance by farmers and present the probabilities that the farmer would take or not take livestock insurance. Table-8 presents the findings from running a logistic regression model.

**Table-8:** Factors influencing adoption of livestock insurance.

Variables	Name of Variables	Coefficient	Significance
$\beta_0$	Constant	7.667	0.044
$X_1$	Age	-0.265	0.831
$X_2$	Education	0.017	0.131
$X_3$	Awareness	6.359	0.001*
$X_4$	Experience	-1.637	0.020**
$X_5$	Farm turnover	0.005	0.906
$X_6$	Premium price	-0.070	0.021
$X_7$	Off farm income	-0.039	0.652
$X_8$	Farm diversification	-0.767	0.065**
$X_9$	Farm size	0.193	0.356

(\*), (\*\*) Respectively indicate significance levels at 1% and 10%.  $R^2=0.664$ .

The value of the adjusted R-squared (0.664) indicates that the independent variables were able to predict 66.4% of the dependant variable.

In Table-8, the results revealed that three (3) of the tested variables show significance in the logit model and these are farming experience, farmers’ awareness and farm diversification. The extent to which the variables influence choice is shown by the coefficients’ column, as explained below.

**Age:** The beta coefficient with respect to age indicates a negative relationship between age and the probability that a farmer adopt livestock insurance. This therefore means that, the probability that a farmer adopt livestock insurance decreases with an increase in age. The expectation was that age would show a positive relationship, i.e. the older the farmer, the more they adopt insurance. The findings in the present study differ from expectations because some farmers rely on their experience which was the low or no occurrence of loss events.

**Education:** The farmer’s educational level has a negative coefficient estimate indicating that, *ceteris paribus*, the probability of purchasing livestock insurance decreases as the level of formal education of the farmer increases. Bullock *et al.* reported that education has a negative impact on a farmer’s willingness to take risk<sup>31</sup>. On the other hand, Mohammed and Ortmann reported that education has a positive impact to farmers’ willingness to take a risk<sup>32</sup>.

**Awareness:** The beta coefficient with respect to a farmer having knowledge on livestock insurance indicates a positive relationship significant at level 5% between knowledge on insurance and adoption of insurance. The positive coefficient indicates that a farmer will use the livestock insurance often, if he/she has information regarding the insurance opportunities.

**Farm experience:** Farmer’s experience has a negative impact on the decision to adopt livestock insurance. Therefore, it appears that older and more experienced livestock farmers are less willing to purchase insurance.

**Farm turnover:** The beta coefficient with respect to farm income shows a negative relationship between the income a farmer receives and the choice of adopting livestock insurance. This result means that the probability of purchasing livestock insurance decreases with an increase in farm income. However, Masoumi and Khodadadi found that farm turnover was positively related to farmers’ likelihood to adoption of livestock insurance<sup>33</sup>.

**Premium Price:** The beta coefficient with respect to premium price indicated a negative relationship between premium price and either a livestock farmer get insured or not. This means that the probability of purchasing livestock insurance for decreases with an increase in price. This result is constant with the a priori expectations and strongly in agreement with Ginder *et al.*<sup>34</sup>. Generally, price has a negative relationship with the willingness to buy a particular good or service.

**Off-farm income:** Has a negative coefficient estimate implying that the more farmers engage in off farm activities the less probability to adapt to livestock insurance.

**Farm Diversification:** Farm diversification has a negative, statistically significant coefficient indicating that diversified farmers are less likely to adopt livestock insurance. Livestock farmers who are diversified may experience lower income variability than non-diversified farmers because the income loss in one enterprise may be compensated for by a higher income in another enterprise.

**Farm Size:** The beta coefficient with respect to farm size indicates a positive relationship. This means that, the chance of adoption of livestock insurance increases with increase in farm size. This result is in contrary to the expected a priori as an

increase in farm size increases the probability that one chooses to insure.

**Farmers’ willingness to Join and Pay for livestock insurance:** The importance of livestock insurance was explained to the interviewed farmers and they were then queried about their willingness to join and pay for livestock insurance. The majority (48%) of the farmers thought that livestock insurance is of average importance to farmers, 28% did not find it important and 24% find it as an essential tool. Although majority of the sampled farmers thought livestock insurance as an important tool, only 26% of them were motivated to take livestock insurance and only 68% of the farmers thought that they would join for livestock insurance soon. 64% of the interviewed farmers thought that livestock insurance was too expensive for them to afford so they were not willing to take it. Table-9 presents findings on farmers’ willingness to take livestock insurance.

**Table 9:** Farmer’s willingness to join and pay for livestock insurance.

	Parameter	Frequency	Percentage (%)
Importance of livestock insurance	Not important	14	28
	Average importance	24	48
	Absolutely essential	12	24
Motivate to take livestock insurance	Agree	13	26
	Disagree	23	46
	Not sure	14	28
Readiness to buy livestock insurance	Ready to buy	10	20
	Not ready to buy	34	68
	No response	02	04
	Still need some time	04	08
Livestock insurance is expensive for me to afford	Agree	32	64
	Disagree	08	16
	Not sure	10	20

### Conclusion

According to WFP agriculture, particularly the livestock is an important sector for Swaziland’s economy and its returns are vital for the development of the economy<sup>35</sup>. Livestock constitute an important sub-sector within the country’s agriculture, accounting for some 26% of the total agriculture gross domestic

product<sup>1</sup>. It has also impact on a large number of households and people, constituting an integral part of the food security and sustainable livelihood. Manyatsi et al. have explained that agriculture, particularly livestock farming, is sensitive to climate change in Swaziland<sup>36</sup>. It is for this reason that farmers need to acquire risk management skills such as adopting livestock insurance policy. The outcomes to these results were to help understand the products offered in livestock insurance market in Swaziland, and to determine if they meet farmers’ needs.

It was found that more than 88% of the livestock farmers interviewed were aware about livestock insurance but they did not have enough knowledge to decide whether to adopt the livestock insurance policy or not. The results also indicate that the demand for livestock insurance in Manzini region is positively influenced by the level of awareness of a farmer.

The main risks that livestock farmers face in Swaziland and would like to insure against were; i. Theft ii. Drought and iii. Lightning.

All these perils are covered under the livestock insurance policies that local insurance companies offer except the drought risk which is not covered. Farmers felt that with drought being excluded, they do not see the reason why they should buy livestock insurance and they complained about the availability of products that are of relevance to their businesses, but the issue was that the expensive premium price of livestock insurance.

The study identified the factors affecting the adoption of livestock insurance by livestock farmers, level of awareness about livestock insurance, the level of willingness of farmers to pay for livestock insurance and recommendations on how to improve the level of awareness of farmers about livestock insurance. It was found that most farmers were aware about livestock insurance. Results indicated that farmers’ age, level of education, farm turnover, premium price, off farm income, farm diversification negatively affect probability of farmer to take up livestock insurance, although farm diversification was significant. However, awareness and farm size positively influence farmers’ awareness about livestock insurance and they were both significant. The finding of the present study is more useful for policymakers, researchers and academicians.

### References

1. Thompson C.F. (2013). Swaziland Business (Agriculture) Year Book (2013). <http://www.swazibusines.com/sbyb2007/>.
2. Climate Change Cell (2009). Crop insurance as risk management strategy in Bangladesh. Department of Environment, Ministry of Environment and Forest Component 4b, Comprehensive Disaster Management Programme, Ministry of Food and Disaster Management Bangladesh.

3. Omari K. (2010). Climate Change Vulnerability and Adaptation Preparedness in Southern Africa-A Case Study of Botswana. Heinrich Boll Stiftung.
4. Meadowcroft J. (2009). Minding the stock: bringing public policy to bear on livestock sector development. Report no. 44010-GLB. Washington, D.C., USA.
5. Ministry of Agriculture (MoA). (2014). Livestock Development Policy. Ministry of Agriculture, Mbabane, Swaziland.
6. Neeliah Harris, Rajkomar Balraj, Dookun-Saumtully Asha, Ramkissoon Jairaj (2006). Food Agriculture and Natural Resources Policy Analysis Network (FANRPAN). Measuring Vulnerability – Challenges and opportunities.(FANRPAN). 2(11).
7. Thornton P.K. (2010). Livestock Production: Recent Trends, Future Prospects. CGIAR/ESSP Program on Climate Change, Agriculture and Food Security (CCAFS), International Livestock Research Institute (ILRS), 365, 2853-2867.
8. Iturrioz R. (2009). Agricultural Insurance. Non-bank financial institutions group, Global capital markets development department, Primer series on insurance, The World Bank.
9. Lidwala Insurance Company (2013). Insurance. Personal lines and Commercial Insurance Products. <http://www.lidwalainsurance.com/insurance/index.php>.
10. SRIC (2014). Corporate History Background. <http://www.sric.sz> (25/09/2015)
11. Food Agricultural Organisation (FAO). (2007). Climate Change: Climate Change Impacts, Adaptation and Vulnerability. *IPCC WG II Fourth Assessment Report*.
12. Thompson C.F. (2014). Swaziland Business Yearbook. A Commercial Guide, Mbabane, Swaziland.
13. Ministry of Agriculture and Cooperatives (MOAC) (2011). Livestock Farming in Swaziland. Mbabane, Swaziland.
14. Hojjati B. and Bockstael N.E. (1988). Modelling the demand for Crop Insurance. Washington D.C., USA, International Food Policy Research Institute.
15. Jarvie E.M. and Nieuwoudt W.L. (1989). Factors influencing crop insurance participation in maize farming. *Agrekon*, 28(2), 11-16.
16. Hardaker J.B., Huirne R.B. and Anderson J.R. (1997). Coping with risk in Agriculture. CAB International, Wallingford. Oxon, UK, 69, 106-111.
17. Casavant K.L. and Infanger C.L. (1984). Economics and Agricultural Management. An Introduction. A Prentice-Hall Company, Reston, Virginia, USA, 144-147.
18. Bowler J. (2007). Risk Management for Stock Owners in Times of Fire and Flood. [http://www.dpi.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0004/104278/risk-management-for-stock-owners-in-times-of-fire-and-flood.pdf](http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/104278/risk-management-for-stock-owners-in-times-of-fire-and-flood.pdf)
19. Msibi C. (2011). Agricultural Insurance. Lidwala Insurance Company; Manzini, Swaziland.
20. Kahan D. (2008). Managing risk in farming. Rome, Italy: Food and Agriculture Organization of the United Nations.
21. Wenner N. and Arias D. (2003). Agricultural insurance in Latin America: Where are we?'. *International Conference: Paving the Way Forward for Rural Finance*, Washington, DC, USA.
22. Dinler T. (2003). Natural Risks and Agricultural Risk Management. *F.A.I.R. Workshop On Agricultural Insurance Antalya, Turkey*.
23. European Commission (2006). Agricultural Insurance Schemes. Report, COM, Brussels.
24. Mouton J. and Marais H.C. (1998). Basic concepts in the methodology of the social sciences. HSRC Press.
25. World Atlas (2014). Map of Swaziland. Worldatlas.com, Inc. Accessed 17/02/2016
26. Central Statistics Office (CSO) (2007). National Census Report. Central Statistics Office, Mbabane, Swaziland.
27. Van Dalen D.B. (1979). Understanding educational research. New York: McGraw Hill, Inc.
28. Gujarati D.N. (2006). Basic Econometrics. 2<sup>nd</sup> edition. New York: Bernard M. Baruch College.
29. Nahvi A., Kohansal Reza M., Ghorbani M. and Shahnoushi N. (2014). Factors Affecting Rice Farmers to Participate in Agricultural Insurance. *Journal of Applied Sciences and Agriculture*, 9(4), 1525-1529.
30. Garrido A. and Zilberman D. (2007). Revisiting the demand of agricultural insurance: The case of Spain. *ETSI Agrónomos (UPM)*.
31. Bullock W.I., Ortmann G.F. and Levin J.B. (1994). Farmer's characteristics, risk sources, and managerial responses to risk in vegetable farming: Evidence from large- and small-scale commercial vegetable farmers in KwaZulu-Natal. *Agrekon*, 33(3), 103-112.
32. Mohammed M.A. and Ortmann G.F. (2005). Factors influencing adoption of livestock insurance by commercial dairy farmers in Three Zobatat of Eritrea. *Agrekon*, 44(2), 172-186.
33. Masoumi S.R. and Khodadadi T.H. (2013). Factors influencing on demand of insurance in agricultural sector of Behshahr County, Mazandaran, Iran. *Technical Journal of Engineering and Applied Science*, 3(19), 2376-2382.
34. Ginder M., Spaulding A.D., Tudor K.W. and Winter J.R. (2009). Factors affecting crop insurance purchase decisions



- by farmers in northern Illinois. *Agricultural Finance Review*, 69(1), 113-125.
35. World Food Programme (WFP). (2010). The state of food insecurity in the world. From <http://www.wfp.org/docrep/013/i1683e/i1683e.pdf>
36. Manyatsi A.M., Mhazo N. and Masarirambi M.T. (2010). Climate Variability and Change as Perceived by Rural Communities in Swaziland. *Research Journal of Environmental and Earth science*, 2(3), 164-169.