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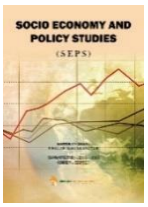

RESEARCH ARTICLE

FARMERS' PERCEPTION TOWARDS CROP AND LIVESTOCK INSURANCE IN BIRENDRANAGAR MUNICIPALITY OF SURKHET DISTRICT: A CASE STUDY ON PRESENT STATUS, CONSTRAINTS AND POTENTIALS FOR FUTURE

Krishna Raj Pandey[a], Lochan Sapkota[b], Yagya Raj Joshi[a*], Janak Chaulagain[a]

[a] Faculty of Agriculture, Agriculture and Forestry University Rampur, Chitwan, Nepal.
[b] Amritsar Group of Colleges IK Gujral Punjab Technical University, India.
**Corresponding author's email: yagyarajjoshi9335@gmail.com*

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ABSTRACT

A simple case study was conducted concerning farmers' perception towards agriculture and livestock insurance in Birendranagar municipality of Surkhet valley. The foremost intention of this research survey was to appraise the current scenario of crop and livestock insurance with constraints and future prospects regarding minimization of agriculture risk and losses among farmers of study area. Prior to the household survey, a key informant survey was conducted with personnel of the Birendranagar municipality office. A total of 100 farmers were selected by random sampling technique and scheduled interviews were carried out during Nov-Dec 2021. The study included 63 non-insurers and 37 insurers as respondents. The average income of insurer farmers was found to be higher than the non-insurer farmers. Majority (78%) of insurance adopters were livestock insurers. More than half (51.72%) of livestock insurers perceived the damage from accident and death of animals as a major risk. Majority of the crop insurers (75%) perceived damage from adverse climatic conditions as a major risk. Income stability was perceived as the most important benefit gained from joining insurance with Relative Importance Index (RII) 0.784. Insurers were found to be most satisfied with the policy of risk coverage with Relative Satisfaction Index (RSI) 0.681. The study divulged lack of information about benefits of insurance and awareness related to insurance services as the major factor behind not joining insurance by more than two-third of respondents (70.49%). Majority of insurers (62.17%) asserted delaying in claim payment as the major drawback of insurance service providers. Improving access of farmers' on agriculture credit, effective publicity of insurance schemes and awareness generation programs regarding risk management strategies can play a crucial role to minimize risks related to crop and livestock production in near future.

KEYWORDS

Adoption, Claim Procedure, Insurance Policies, Income Stability, Risk Coverage

1. INTRODUCTION

Due to the second largest GDP contribution after the service sector, agriculture is considered the backbone of Nepalese economy. Agriculture sector contributes about 23.13% of total national GDP (O'Neill, 2021). Livestock industry of the agriculture sector accounts for 25.7% of agricultural GDP, which is about 11.5% of total national GDP and also plays a major role in human nutrition as well as economy (Poudel et al., 2020). Agriculture and livestock sector provides employment opportunities for about 60% of Nepalese population (Adhikari and Bidari, 2018). Majority of the marginalized Nepalese farmers rely on livestock farming on their small land to make a living (Pradhanang et al., 2015). Agriculture and livestock farming is the mainstay for the income of rural farmers (Bhatta et al., 2018). Being an integral part of Nepalese economy and an increased concern of people, the livestock sector is rapidly growing in Nepal (Poudel et al., 2020). Livestock are the major sources of meat, eggs, milk, fur, leather, wool etc. Livestock also provides the majority of essential nutrients to human diet which are poor or absent in plant sources like vitamin A, vitamin B-12, riboflavin, calcium, iron and zinc (Murphy and Allen, 2003). Thus, demand for livestock products is increasing rapidly.

According to an estimation of FAO, demand for livestock products will increase by more than 50% and the majority of demand will be driven by Africa and South Asia (Sustainable Small-scale Livestock Production, 2020). Along with an increasing trend of livestock rearing, many of the Nepalese farmers are facing risks of production like diseases and natural disasters. Major diseases such as Foot and Mouth Disease, Peste des Petits Ruminants, black quarter, hemorrhagic septicemia, Swine fever, Avian influenza, and Newcastle disease causes tremendous loss in livestock enterprises (Poudel et al., 2020). Livestock are also facing a huge threat of climate change (Panthi et al., 2016). Several impacts of climate change on livestock include development of various diseases, loss of forage, scarcity of water, decline in milk production etc (Dhakal et al., 2013). Climate change has also brought an impact of erratic rainfall, flood, drought, development of new diseases and pests on crop production (Shrestha and Nepal, 2016). According to breeding, animal health, marketing, institutional and policy related are the major risks of livestock production in India (Chand et al., 2017).

Similarly, crop production is also a major source of income for Nepalese farmers. Many of the Nepalese farmers solely depend on their field produce to sustain their livelihood. In contrast, many of the Nepalese farmers have to face huge climatic as well as immoral human disasters as a challenge during production. Climate has a huge impact in Nepalese

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agriculture due to fourth, eleventh and thirteenth ranking in terms of vulnerability to climate change, earthquake and flood risks respectively (Sustainable development goals, 2021). Nepalese farmers from foothills and mountains are facing huge agricultural loss due to dry winter and unpredictable monsoon (Subedi, 2010). To get disillusioned from such challenges, agriculture insurance has found to play an important role. Insurance is a risk management system for business and other organizations, which pays a definite amount of money known as premium, in exchange for reassured compensation for losses resulting from predefined conditions (Ghimire, 2014). Insurance helps to take risk, provides financial defense, reduces the financial distress, and hastens the pace of economic growth (Ghimire, 2014). Though insurance is not an alternative way to increase production, it has a huge role to mitigate risk of insurers during adverse conditions that ultimately maintains the financial stability of farmers. It protects farmers from loss due to various vulnerable conditions.

In Nepal, agriculture insurance was initiated in 2069 BS with the issuance of a Directive related to governmental premium subsidies for crop and livestock insurance. According to the guidelines laid by Crop and Livestock Insurance Directive 2069, livestock sectors (cow, buffalo, sheep/ goat, pig, etc.), poultry sector (hen, duck, ostrich, pheasant), fish farming sectors (Fish: fish, trout, fish pond) and crop production sectors (Vegetable, mushroom, paddy, potato, fruit, banana, cardamom, ginger, turmeric, tea, coffee, citrus fruits etc.) will be worth doing insurance (MEFIN, n.d.). The losses in those sectors due to natural calamities (fire, lightning, earthquake, flooding, landslide, drought, storm, hailstorm, frost, snow etc.), sudden or accidental external factors, diseases and pests will be incurred by insurance (MEFIN, n.d.). Because of more safety to agricultural production, agriculture insurance is an increasing trend in Nepal. This paper aims at identifying the present scenario of insurance adoption along with constraints and future potential regarding minimization of agricultural risk losses among farmers of Birendranagar municipality of Surkhet district, Nepal.

1.1 Objectives of the Study

This research survey is carried with the aim to study about the present status of crop and livestock insurance schemes and adoption by farmers along with prevailing constraints and future potential related to insurance in Birendranagar municipality of Surkhet district, Nepal. However, the specific objectives include:

- To investigate farmer's knowledge and perception towards adopting crop and livestock insurance

- To assess satisfaction from crop and livestock insurance policies among the insurers

- To identify the reasons for not adopting crops and livestock insurance

- To know about the major drawbacks of insurance service providers

- To find out the areas of improvement for ensuring maximum number of insurers in future

1.2 Limitations of the Study

Despite a forethought target of covering a larger area and greater number of respondents, the survey was confined to only 100 respondents due to lack of enough time and increased risk of coronavirus infestation in Birendranagar municipality. Further, the area of survey research was confined to one municipality of a district. Only a few villages of the municipality were taken as a type of representative for the whole municipality. Therefore, the findings of this study are to be viewed in specific circumstances for the particular district as they are based on a small area under consideration and may be applicable to the conditions with similar context. In addition, personal observation of the interviewer may have had the chances of bias. Nevertheless, this study is hoped to have achieved its basic objectives regarding farmer's perception towards crop and livestock insurance, its effectiveness and constraints related to farmers-insurance relation in Birendranagar Municipality of Surkhet district undermining and exposing the areas for future improvement.

2. Materials and Methods

2.1 Description of Study Area

Birendranagar municipality of Surkhet district was purposefully selected for the study. It is located in Surkhet valley and surrounded by hills. Geographical orientation of this valley is 28° 36′ 0″ N, 81° 38′ 0″ E (28.6, 81.633333). This area was selected purposely for the purpose of study based on the degree of farmers involvement in agriculture and livestock insurance as majority of the farmers of this locality were found to be aware of livestock insurance (Key informant interview with Birendranagar Municipality Office).

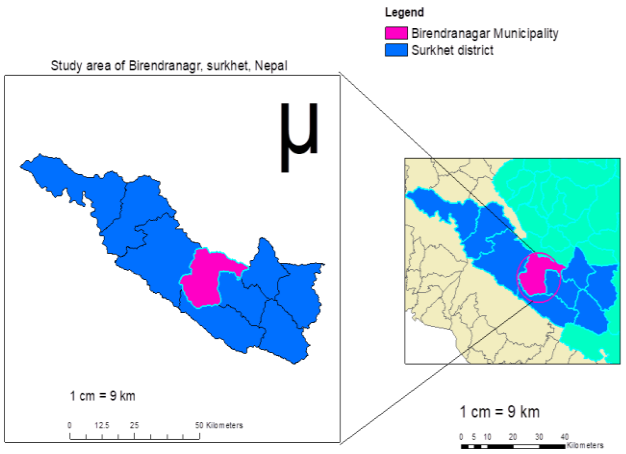

Figure 1: Map of study site

2.2 Data Collection and Sampling Techniques

A well-structured pretested questionnaire was administered by direct interviews among the local farmers for data collection. Structured and scheduled in-person interviews of 37 insurers and 63 non-insurer farmers were conducted randomly from different clusters of different wards.

2.3 Data Analysis

Collected raw data were analyzed by using tools like Microsoft Excel and Statistical Package for the Social Sciences (SPPS). Mean, standard deviation, frequency and percentage were calculated and expressed in tabular form. Five-point Likert scale was used to calculate Relative Importance Index (RII) and Relative Satisfaction Index (RSI) to determine farmers' perception on benefits gained from joining insurance and satisfaction to different factors of insurance policies respectively. For the determination of RII, the Five-point Likert scale compares strongly agree, agree, neither agree nor disagree, disagree and strongly disagree using the scores of 5, 4, 3, 2 and 1 respectively. Similarly, very satisfied, satisfied, neutral, not satisfied and very unsatisfied are compared based on Five Point Likert scale using the scores of 1, 2, 3, 4 and 5 respectively for the calculation of RSI.

The index value for perception (RII), and satisfaction (RSI) was calculated as: $\sum S_n F_n / A \times N$

Where, S_n is the scale value of n^{th} class on Likert Scale, F_n is frequency of n^{th} class, A is the highest scale value (5 in this paper for strongly agreed and very satisfied class) and N is total number of insured respondents.

3. Results and Discussion

3.1 Demographic and Socio-Economic Characteristics

Table 1 gives the summary of the demographic and socio-economic characteristics of the interviewed household head. The surveyed area was dominated by patriarchal family types as majorities (81%) of the household heads were male. The average age of the household head was found to be 42.64 years. The average family size of insurers was higher (6.27) than the average family size of total respondents (5.92) and of non-insurers (5.71). More than half (60%) of the interviewed household heads had received at least secondary level of education (Figure 2). Majority (97%) of the farmers were marginal land holders (less than 1 hectare). More than half (55%) of the farmers had at least 5 years of farming experience (Figure 5). Less than half (35%) of the interviewed farmers had access to credit with an average of 0.59 among insurers and 0.19 among non- insurers. The average annual income of the farmers was Rs.3.99 lakhs which among insured farmers was found to be higher (5.20 lakhs).

Table 1: Demographic and Socio-Economic Characteristics of Household Head						
Variables	Overall (N=100)		Insurers (N=37)		Non-Insurers (N=63)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Gender (Male=1, Female=0)	0.81	0.39	0.84	0.37	0.79	0.40
Family Size	5.92	3.26	6.27	3.65	5.71	3.03
Age (Years)	42.64	11.65	41.65	10.68	43.22	12.23
Education Level of Respondent (Secondary=0, Otherwise=1)	0.6	0.49	0.62	0.49	0.59	0.50
Land Holding (Marginal=1, Above Marginal=0)	0.97	0.17	0.97	0.16	0.97	0.17
Credit Access (Yes=1, No=0)	0.35	0.48	0.59	0.50	0.19	0.40
Average Annual Household Income (Lakhs)	3.99	7.20	5.20	10.79	3.23	3.37

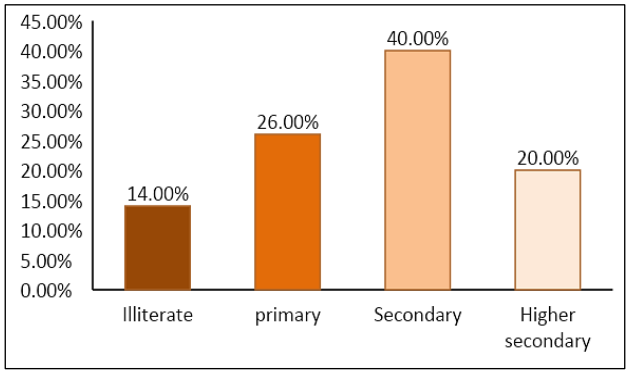

Figure 2: Education level of the household heads

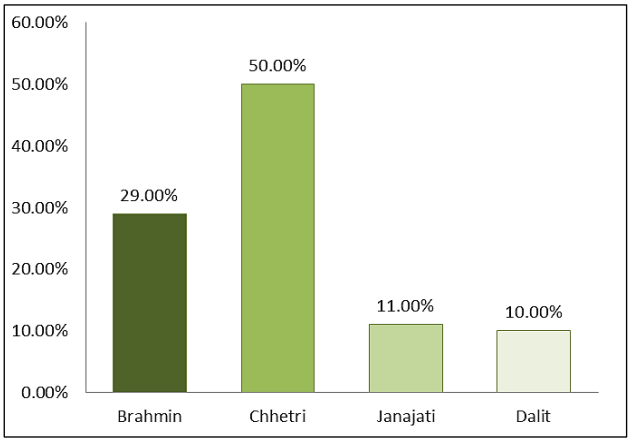

Figure 3: Ethnicity of interviewed respondents

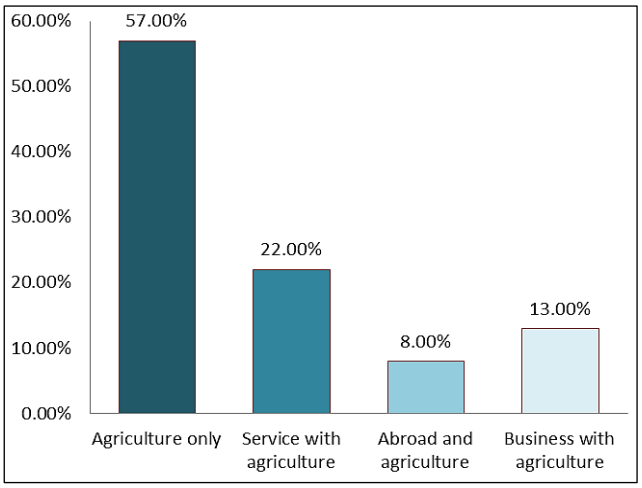

Figure 4: Occupation type of respondents

The occupation of the majority (57%) of the interviewed household head was found to be agriculture only, while 22% were involved in service with agriculture, 13% involved in business with agriculture and 8% involved in foreign employment with agriculture.

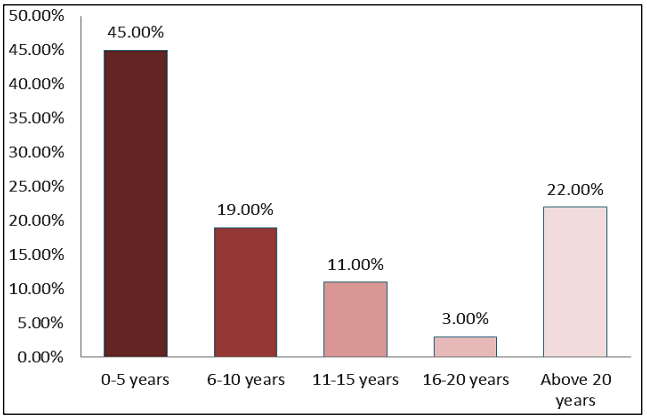

Figure 5: Farming experience of household heads

3.2 Knowledge and Perception

Table 2 gives the general idea on farmers' knowledge and perception on crop and livestock insurance. Among the total surveyed households, the majority (71%) of the farmers were found to be familiar with insurance while 29% of farmers were unfamiliar. Male predominantly adopted insurance (83.78%) in comparison to females (16.22%), among the insured farmers in our study site. The majority of the insured farmers had adopted insurance for their livestock (78.38%) and the remaining (21.62%) had insured for their crops.

Table 2: Farmer's Knowledge and Perception on Crop and Livestock Insurance	
Variables	Birendranagar Municipality, Surkhet
A. Farmers Familiarity with Insurance	
Familiar	71 (71%)
Un-Familiar	29 (29%)
B. Total Number of Insured Farmers	
Male Adopters	31 (83.78%)
Female Adopters	6 (16.22%)
C. Type of Insurance Adopted	
Crop Insurance	8 (21.62%)
Livestock Insurance	29 (78.38%)
D. Category of Adopted Crop Insurance	
Vegetables	7 (87.5%)
Cereal Crops	0 (0%)
Fruits	1 (12.5%)
Mushroom	0 (0%)
Any Other...	0 (0%)
E. Category of Adopted Livestock Insurance	
Poultry, Birds	6 (20.69%)
Livestock	20 (68.97%)
Fish	1 (3.45%)
Pig	2 (6.89%)
Any Others	0 (0%)

Among farmers who had adopted crop insurance, most of them adopted insurance for their vegetable crops (87.5%) while 12.5% had adopted insurance for their fruits. Among farmers who had adopted livestock insurance, most of them adopted insurance for their livestock (68.97%) while 20.69%, 6.89% and 3.45% adopted insurance for poultry, pig, and fish respectively.

3.3 Farmers Perception on Risk Related to Crop and Livestock Insurance

Among the farmers who had adopted insurance for their crops, the majority of them (75%) perceived the adverse condition of climate as the risk related to insurance while one-fourth (25%) of the respondents perceived disease, insect pest damage as the risk.

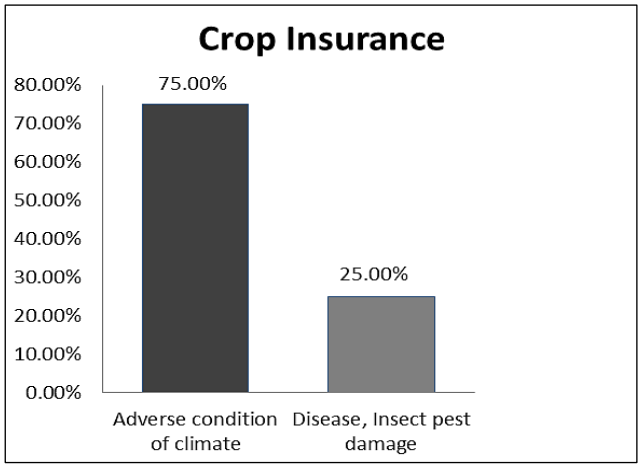

Figure 6: Farmers perception on risk related to crop insurance

Among the farmers who have adopted insurance for their livestock (78.38%), more than one half (51.72%) perceived the damage from accident and death as major risk related to insurance, while 34.48%, 10.34%, 3.45% perceived damage from accident and death and mastitis and infertility, mastitis and infertility, lack of oxygen or ammonia in the fishpond as the risk related to insurance, respectively. This data is presented in Figure 7.

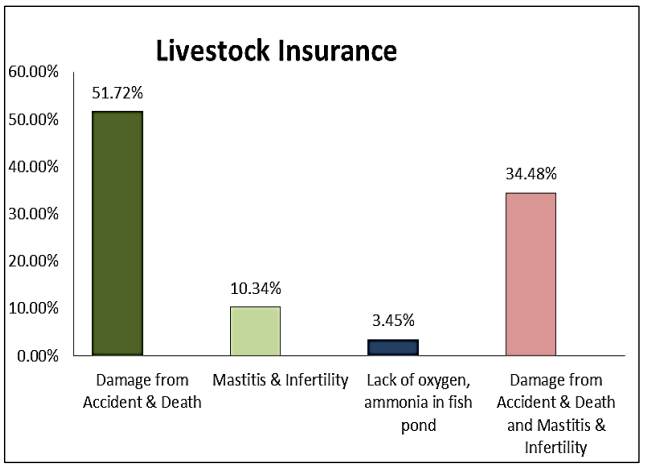

Figure 7: Farmers perception on risk related to Livestock insurance

3.4 Perception of Insured Farmers on Benefits of Adopting Crop/Livestock Insurance Schemes

Benefits of joining insurance services were ranked on the basis of Relative Important Index (RII) calculated using a five-point Likert scale based on the response of insured farmers as depicted in Table 3.

3.5 Satisfaction of Crop and Livestock Insurers Regarding Various Factors Affecting Insurance Policy

Five-point Likert scale (Table 4) was used for the calculation of satisfaction index of insured respondents in relation to various factors affecting insurance policies.

Table 3: Perception of Crop and Livestock Insurers on Benefits Gained from Joining Insurance

Benefits of Adopting Insurance	Strongly disagree (%)	Disagree (%)	Neither Agree Nor Disagree (%)	Agree (%)	Strongly Agree (%)	Relative Important Index (RII)	Rank
Provided Awareness	5.41	2.70	10.81	62.16	18.92	0.773	III
Yield Protection	0	5.41	27.03	48.65	18.92	0.762	II
Minimum Debts	5.41	2.70	16.22	62.17	13.51	0.751	IV
Income Stability	5.41	2.70	10.81	56.76	24.32	0.784	I
Technological Advancement	0	8.11	21.62	59.46	10.81	0.746	V
Performing New Agricultural Practices	0	10.81	13.51	72.98	2.70	0.735	VI

Income stability was ranked as the most important benefit of joining insurance with RII of 0.784. Income stability was followed by Yield protection with RII of 0.762 and the least important benefit of adopting insurance performing new agriculture practices was ranked VI with lowest RII of 0.735.

Table 4: Satisfaction of Crop and Livestock Insurers Regarding Various Factors Affecting Insurance Policy

Factors	Very Satisfied (%)	Satisfied (%)	Neutral (%)	Not Satisfied (%)	Very Unsatisfied (%)	Relative Satisfaction Index (RSI)	Rank
Insurance Procedure	0	51.35	27.03	18.92	2.70	0.654	II
Premium Amount	0	48.65	29.73	13.51	8.11	0.638	III
Valuation	2.70	16.22	51.35	24.32	5.41	0.573	VI
Risk Coverage	2.70	59.46	18.92	13.51	5.41	0.681	I
Estimation of Indemnity Level	0	21.62	45.95	32.43	0	0.578	V
Claim Procedure	0	54.05	18.92	16.22	10.81	0.632	IV

The Relative Satisfaction Index (RSI) showed that risk coverage was perceived as the most satisfying policy of insurance schemes with a satisfaction index of 0.681. Insurance procedure was ranked as the second most satisfied policy with a satisfaction index of 0.654. Insured farmers were least satisfied with the policy of valuation (crops and livestock) with a satisfaction index of 0.573.

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3.6 Reasons for Not Joining Crops and Livestock Insurance

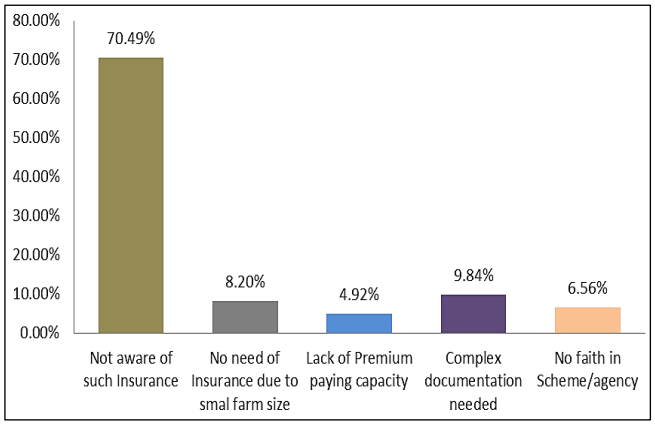

Figure 8: Reasons for not joining crops and livestock insurance

Figure 8 shows the reasons for not joining crops and livestock insurance by the non-insured farmers (63) found in our study. The study revealed that the major reason for not joining the insurance scheme was lack of knowledge and information about benefits from such insurance services (70.49%) followed by complex documentation needed (9.84%), no need for insurance due to small farm size (8.20%), no faith in scheme/agency (6.56%) and lastly lack of premium paying capacity (4.92%).

3.7 Drawback of Insurance Service Providers

Table 5 shows the drawbacks of insurance service providers as experienced by the insurers. Majority of the insured farmers (62.17%) revealed the major drawback of insurance providers to be delay in claim payment followed by negligence in valuation of assets (16.22%), altering insurance policy at the time of claim payment (13.51%) and lastly negligence in identifying indemnity level (8.10%).

Table 5: Drawback of Insurance Service Providers

Drawback of Insurance Service Providers	Birendranagar Municipality, Surkhet	
	Frequency	Percentage
Delay in Claim payment	23	62.17
Negligence in Valuation	6	16.22
Negligence in Identifying Indemnity Level	3	8.10
Altering Insurance Policy at The Time of Claim Payment	5	13.51

3.8 Strategies for Future Improvement

At the end of the interview session during the study, all the respondents were given opportunities to select among a few programs in order to find out areas for future improvement. Table 6 shows the responses received from farmers regarding the planning of future programs for minimizing their crop and livestock losses.

Table 6: Future Programs for Risk and Loss Minimization

Future Programs	Frequency (n=100)
Motivation Programs for farmers	13
Improving Access of Farmers on Agricultural Credit	35
Awareness Generation Programs Regarding Risk Management Strategies	19
Effective and Adequate Publicity of Insurance Schemes Along With Amendment in Their Present Policies	33

As shown in Table 6, majority of the respondent (35%) demanded easy access to agriculture credit for farmers followed by effective and adequate publicity of insurance schemes along with amendment in their present policies (33%), awareness generation programs regarding risk management strategies (19%) and lastly motivation programs for farmers (13%).

4. Conclusion

Huge loss of farmers produces due to natural as well as uncertain human activities leads to major issues in the agriculture industry. Agriculture insurance helps to mitigate financial loss caused by different natural disasters like flood, windstorm, fire, diseases, pests etc. Agricultural insurance schemes facilitate cutting back the risks and vulnerabilities of poor rural smallholders and open their access to a variety of financial services for uplifting their livelihoods. Abrupt climate change resulting in repeated occurrence of natural disasters along with incidence of disease and insect pests have made agriculture a risky occupation for the farmers. To minimize the losses from such devastating damages, farmers are directed towards adoption of agriculture (crop and livestock) insurance.

Crop and livestock insurance adoption rate have been growing at a slower pace and presently have gained higher importance in the context of Nepal. Majority of the farmers surveyed were unaware about the benefits that can be taken as advantage after joining insurance services for minimizing their agricultural losses. Livestock insurance adoption rate was comparatively higher than that of crop insurance. Damage from adverse climatic conditions was perceived as major risk by crop insurers followed by disease pest damage whereas damage from accident and death was perceived as major risk by livestock insurers. Risk coverage was perceived as the most important benefit gained from insurance whereas performing new agricultural practices was considered as of least importance among the insured farmers. Insurers were found to be most satisfied with the policy of risk coverage and most dissatisfied with valuation policy.

The study revealed lack of information about benefits of insurance and awareness related to insurance services as the major factor behind not joining insurance by more than half of respondents. In addition, insurers asserted delaying in claim payment as the major drawback of insurance service providers. Based on the findings of this study, enhancing the future scenario of agriculture (crop and livestock) and farmers through the minimization of economic loss should be the subject of major concern for policy makers and insurance service providers. Future Potential for income stability of farmers, yield protection, minimum debts and implementation of new agricultural practices lies within improving access of farmers on agriculture credit; amendment in existing norms, principles and policies along with effective and adequate publicity of insurance schemes. In addition, conduction of awareness generation programs at regular intervals regarding risk management strategies should be prioritized.

Acknowledgement

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