

REVIEW ARTICLE

EVALUATING THE IMPACT AND EFFICIENCY OF AGRICULTURAL INSURANCE IN NEPAL

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ABSTRACT

Agriculture in Nepal is increasingly vulnerable to climatic hazards, making the adoption of agriculture insurance a crucial strategy for safeguarding farmers' livelihoods. The government provides an 80% subsidy on insurance premiums to encourage farmers' participation in insurance activities. Despite the formal initiation of agricultural insurance in 2013, crop insurance adoption remains low compared to livestock insurance due to complex procedures and the need for field monitoring to assess insured amounts in damaged crops. The Nepal Insurance Authority plays a pivotal role in expanding the reach of agriculture insurance by encouraging non-life insurance companies to establish branches in all districts, fostering greater farmer engagement. Agriculture insurance not only enhances food security but also supports the economic development of the country by bridging the gap between risk management and sustainable agribusiness practices. This review article underscores the significance of agriculture and livestock insurance, outlines the Agriculture Insurance Operation Framework, discusses the current status, adoption, and challenges associated with the development of agricultural insurance in Nepal.

KEYWORDS

Agriculture, Insurance, Livestock, Nepal Insurance Authority

1. INTRODUCTION

Agriculture, believed to have its origins in foraging, has undergone transformative changes over time (Conwy, 2004). Various agrarian revolutions have significantly influenced human livelihoods. The advent of domestication marked a pivotal shift, replacing foraging as the most successful adaptation in human history. Agriculture emerged independently in various regions across the globe, evolving from subsistence farming to a focus on commercialization (Johnson and Earle, 2000). Agricultural disruptions can have far-reaching economic consequences, particularly in countries where the sector plays a critical role in national income (Počuča et al., 2013).

In Nepal, agriculture is a cornerstone of the economy and serves as the primary livelihood source for a significant portion of the population. The sector contributes approximately 24.1% to the country's GDP, with the livestock subsector alone accounting for 24% of agricultural GDP (MoALD, 2022). Nearly 64% of the population is engaged in agricultural activities, underscoring its role as the foundation of the national economy and the primary source of income for two-thirds of the population (Chaudhary, 2018). Despite its centrality, the agricultural sector in Nepal faces persistent challenges. Reliance on traditional farming methods, rain-fed irrigation systems, weather-dependent cultivation, inadequate infrastructure, and small landholdings hinder its growth and productivity (Ghimire, 2013). Additionally, as a country highly vulnerable to natural disasters, agricultural operations in Nepal are inherently risky (Pandey et al., 2021).

Climatic hazards often lead to significant property damage and livelihood disruptions, resulting in substantial economic losses. Furthermore,

disease outbreaks in livestock and the proliferation of agricultural pests

are recurring challenges, severely affecting staple crops such as rice, wheat, and maize. These issues not only undermine food security but also threaten the livelihoods of farming communities (Yemane et al., 2016; Pandey et al., 2021).

Nepal's susceptibility to natural disasters amplifies these challenges. Ranked fourth, eleventh, and thirteenth globally in terms of vulnerability to climate change, earthquakes, and floods, respectively, the nation faces escalating property damage and livelihood disruptions due to these hazards (Subedi, 2010; Sustainable Development Goals, 2021). External factors, often beyond the control of farmers, significantly influence agricultural productivity (Shashi and Umesh, 2015). People today are increasingly concerned about physical and economic security, reflecting a broader sense of uncertainty in their daily lives (Chambers, 1987; Cohen, 2016).

To address these uncertainties, agricultural insurance has emerged as a critical risk management strategy. By paying a specified premium, farmers can transfer the risks associated with agriculture to an insurance provider, offering a degree of financial security (World Bank, 2011). This approach is widely regarded as an effective mechanism for managing risks in the agricultural sector (Hazell, 1992). An agricultural insurance agreement involves two key stakeholders: the insurer, or the entity offering the coverage, and the insured, or the individual purchasing the policy. The insurer may also be referred to as the insurance carrier or underwriter, while the insured is commonly known as the policyholder (Romanosky, 2019; Cowley and Cummins, 2016).

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2. AGRICULTURE INSURANCE (AI)

Agriculture insurance (AI) serves as a crucial risk mitigation tool, offering farmers financial protection against crop losses caused by natural hazards beyond their control (Dandekar, 1976; Benami and Carter, 2021). By safeguarding farmers from unpredictable risks, AI plays a significant role in promoting agricultural development (Chang, 2009; Nnadi et al., 2013). The origins of crop insurance date back to the late 1700s in Germany, where small mutual companies introduced Crop Hail insurance (Smith and Glauber, 2012). Over time, the popularity of AI expanded globally, with more than half of the world's countries adopting some form of agricultural insurance (Mahul and Stutley, 2010). This widespread adoption reflects its importance in addressing various risks, such as hailstorms, droughts, wild animal attacks, and other natural disasters, which can devastate agricultural production and erode farmers' morale.

In such scenarios, AI acts as a catalyst to reduce risk and encourage resilience (Rao, 2002; Narayanan and Saravanan, 2011; Sundar and Ramakrishnan, 2015). In Nepal, where over 66% of the population is engaged in agricultural activities, AI holds particular importance (MoF, 2022). Recognizing its significance, the Government of Nepal introduced a regulated agriculture insurance program as a pilot program in the 1980s through government-run projects, development organizations, and farmers' cooperatives operating within a limited number of districts (World Bank, 2009). Based on recommendations by the World Bank to expand these programs nationally with subsidies, Nepal issued the Crop and Livestock Insurance Directives (CLID) in 2013, laying the foundation for structured agricultural insurance across the country.

3. HISTORY OF INSURANCE

The history of insurance traces back to the dawn of human civilization, evolving alongside societal advancements. The modern form of insurance emerged in the 1600s in Europe, with marine insurance pioneered by Lloyd's House, followed by the establishment of fire insurance offices in the United Kingdom in 1668 and the United States in 1752 (Ghimire, 2014). Agricultural insurance is widely acknowledged as a complex domain, requiring substantial technical proficiency throughout its design and implementation stages. (Mahul and Stutley, 2010). In Nepal, the history of non-life insurance spans over six and a half decades (Pandit, 2021). However, formal agricultural insurance took shape only after the implementation of the Insurance Policy 2013, which prioritized farmers and marginalized groups through microinsurance programs (Ghimire, 2014). Prior to this policy intervention, some private insurance companies provided agricultural insurance services informally. Additionally, strategies adopted by the Agriculture Development Bank mirrored the objectives of agricultural insurance.

4. AGRICULTURE AND LIVESTOCK INSURANCE

Agriculture insurance aims to safeguard farmers from potential crop losses caused by natural factors such as pests, diseases, hailstorms, and hurricanes, ensuring the protection of their investments. Similarly, livestock insurance provides coverage against the loss or death of livestock due to diseases or accidents, securing the investments of both commercial and individual farmers. In Nepal, both agriculture and livestock insurance programs are heavily subsidized, with the Government of Nepal covering 80% of the insurance premiums. This subsidy underscores the government's commitment to supporting the agricultural sector and mitigating risks for farmers.

5. CROPS AND LIVESTOCK SECTORS

The Crop and Livestock Insurance Directive, 2019 outlines 30 types of insurance facilities in Nepal. Among these, seven types focus on livestock and poultry, including insurance for fish, honeybees, cattle and buffaloes, poultry, goats, and pheasants. For crops, the directive provides two types of insurance schemes:

- **Cost of Production-Based Insurance:** This covers seven crops, including paddy, potatoes, fruits, vegetables, mushrooms, cardamom, and bananas.
- **Production Value-Based Insurance:** This applies to 16 crops, including sugarcane, cereal crop seeds, spring rice, vegetables, fodder, ginger, turmeric, tea, coffee, kiwi, dragon fruit, timur (Sichuan pepper), mentha, mandarin oranges, sweet oranges, and lime.

These programs ensure comprehensive risk coverage for both crop and livestock producers, addressing their specific needs and vulnerabilities.

6. AGRICULTURE INSURANCE OPERATION FRAMEWORK

The Government of Nepal implements agricultural insurance via two major policy frameworks: the Crop and Livestock Insurance Directive of 2019 and the Crop and Livestock Subsidy Premium Insurance Directive of 2013. Overseeing these efforts is the Nepal Insurance Authority, which assigns insurance companies to various districts to manage agricultural insurance activities (Pandey et al., 2021).

6.1 Key Operational Elements

District-Level Presence:

Insurance companies are required to establish branch offices near Agriculture Knowledge Centers and Veterinary Knowledge Centers.

Local Accessibility:

To enhance access, insurance companies collaborate with microfinance institutions, ensuring their services reach all local levels.

6.2 Claims and Indemnity Evaluation

- Farmers must notify the insurance company within 2–3 days of an incident (Crop and Insurance Directive, 2019)
- Compensation is determined based on an evaluation of crop damage or livestock loss by technical experts.
- Technicians involved in insurance processing are entitled to a 5% commission from the insurance amount.

6.3 Weather Index Insurance (WII)

- Introduced in Nepal by Shikhar Insurance Company (SIC) in 2015/16 began as a pilot program for apple farming in Karnali Province (Ghimire, 2020).
- Unlike traditional insurance, WII bases indemnities on weather parameters such as rainfall, temperature, soil moisture, and relative humidity, rather than direct damage to crops.
- Currently, rainfall is the most commonly used weather parameter for WII in Nepal (Ghimire et al., 2016).

7. ADOPTION AND EFFECTIVENESS

The Government of Nepal has made crop insurance mandatory for farmers to receive grants under government-supported projects and programs such as the Youth Self-Employment Program (Ghimire et al., 2016). Agriculture and livestock insurance have gained significant importance in recent years due to the increasing frequency of abrupt climatic changes, resulting in extensive damage to production systems. As a fresh government intervention, agricultural insurance programs are gradually reaching Nepalese farmers.

Since 2020/21, farmers have been allowed to pay insurance premiums even after harvest, significantly improving the adoption of insurance schemes. Studies show that the impact of insurance is more effective in developing countries than in developed ones (Han et al., 2010; Karki et al., 2021). Insurance helps reduce the capital required to cover losses through risk pooling, positively affecting firms and households (Feyen and Lester, 2013). Incorporating vulnerable groups into agricultural insurance schemes could, in the long term, become an effective tool for poverty reduction and financial inclusion (Ghimire, 2018).

Insurance serves as a link between savings and investments, playing a vital role in fostering economic growth and development (Pandit, 2021). Research consistently highlights the positive role of insurance in economic development, irrespective of whether it is life or non-life, in developed or developing countries, or industry- or agriculture-based (Ghimire, 2014). Crop insurance, in particular, reduces farmers' vulnerability to income shocks, stabilizes their income, and enhances their capacity to invest in their farms and households, ultimately improving their overall socio-economic status (Jabbar et al., 2020).

8. CURRENT STATUS

Agricultural insurance is available in more than 100 countries globally, ranging from well-established programs in high-income nations to pilot schemes and only one-third of middle- and low-income countries currently offer such products and programs (World Bank, 2009).

Nepal is home to 37 licensed insurance companies, comprising 14 life insurance providers, 14 non-life insurers, 2 reinsurance firms, and 7 microinsurance companies (Nepal Insurance Authority, 2024). In addition to these private insurers, farmers' cooperatives and the Agricultural Development Bank's Credit Security program are implementing agricultural insurance schemes across various regions with different

approaches (Ghimire et al., 2016).

Despite these initiatives, only 4% of total agricultural holdings in Nepal have insurance coverage. Among these, 84% are for livestock farming, 8% for cereal crop farming, and 4% for poultry farming (National Agriculture Census, 2022). The Nepalese government provides an 80% subsidy on insurance premiums for agricultural activities and mandates that 5% of insurance policies must be allocated to agriculture, livestock, and produce (Crop and Insurance Directive, 2019).

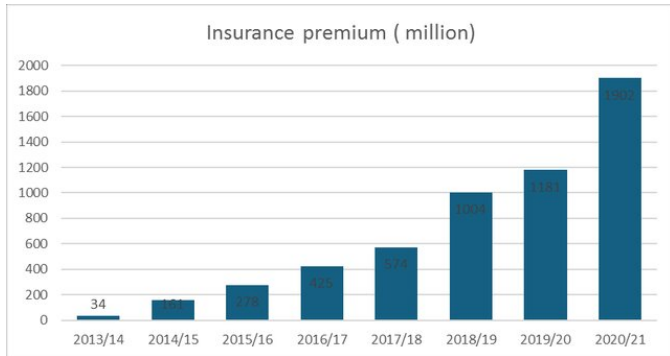


Figure 1: Graph illustrating the premiums collected from agriculture insurance by various insurance companies (Source: Nepal Insurance Authority)

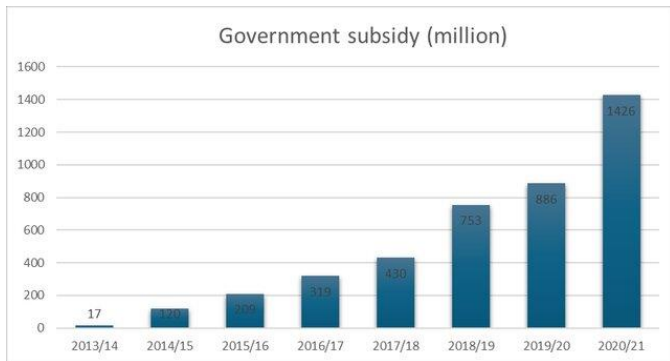


Figure 2: Graph depicting the subsidy amount provided by the government for agriculture insurance (Source: Nepal Insurance Authority)

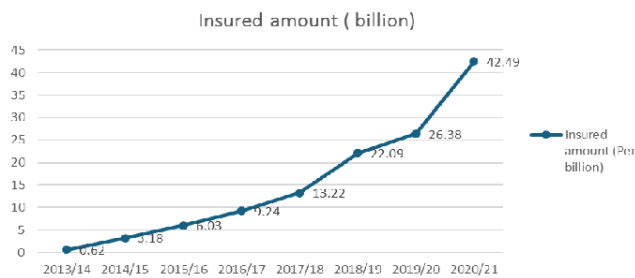


Figure 3: Line diagram depicting the agriculture insurance amount provided to farmers (Source: Nepal Insurance Authority)

9. CHALLENGES FOR DEVELOPMENT OF AGRICULTURAL INSURANCE IN NEPAL

Implementing agriculture insurance in a least developed agrarian country where the majority of farmers are illiterate and earn less than \$1 per day poses significant challenges (Ghimire and Kumar, 2014). The government has introduced various programs to encourage the adoption of crop and livestock insurance, aiming to expand coverage for farmers. However, despite these initiatives, the uptake of insurance remains relatively low among the farming community.

9.1 Institutional Challenges

- Lack of farmer awareness and access to agricultural insurance.
- Low supply and demand for suitable agricultural insurance products.
- Weak uptake of livestock insurance, covering less than 0.2% of the

national herd.

- Absence of legal and regulatory frameworks for agricultural insurance.
- Lack of supervision and recognition of informal insurance by cooperatives hindering collaboration with private insurers.

9.2 Financial Challenges

- Private insurers lack financial capacity and are reluctant to invest in high-risk agricultural insurance.
- Cooperatives have limited financial reserves and no reinsurance mechanisms, leaving them vulnerable to catastrophic losses.

9.3 Technical Challenges

- Limited exposure to international agricultural insurance practices and technologies.
- Narrow range of crop and livestock insurance products, requiring strengthening and customization for Nepal's agro-climatic regions.
- Lack of high-quality, long-term data on crop production, yield, and livestock mortality.

9.4 Operational Challenges

- Private insurers lack rural branch networks for distribution.
- High administrative costs for insurance delivery to small-scale farmers with small landholdings and herds.
- Need for group sales models, such as linking insurance to input supply or seasonal loans.

Effective coordination between insurance companies, banks, and the government is essential to provide insurance policies to farmers (Aggarwal et al., 2016).

10. CONCLUSION

Agriculture insurance can serve as a crucial component of Nepal's economy, fostering food security, stability, and sustainability. Given the inevitability of climatic hazards, agriculture insurance acts as a protective measure for farmers, mitigating risks associated with adverse weather conditions and promoting the long-term growth of agribusiness activities. Enhancing farmer awareness of insurance products can be achieved through active participation in social and community-based organizations such as farmers' unions, self-help groups, watershed unions, and cooperative credit societies. A structured agricultural insurance system is an immediate necessity, emphasizing the importance of integrating agricultural insurance programs for maximum effectiveness. The collaboration of the government and the insurance sector is essential to ensure the success of such programs.

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