

Risk Analysis and Premium Assessment in Albanian Agricultural Insurance

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(Received: 11 February 2025, Accepted: 17 February 2025)

(2nd International Conference on Recent and Innovative Results in Engineering and Technology ICRIRET, February 11-12, 2025)

ATIF/REFERENCE: Reka, A., Gjoni, L., Kosova, R., Tabaku, E. & Kosova, A. M. (2025). Risk Analysis and Premium Assessment in Albanian Agricultural Insurance. *International Journal of Advanced Natural Sciences and Engineering Researches*, 9(2), 268-275.

Abstract – Agriculture plays a vital role in the economy of Albania, accounting for a significant portion of the country's GDP and employment. However, the sector faces various risks, including natural disasters, climate change impacts, and market volatility. These risks threaten agricultural production and farmers' livelihoods, underscoring the need for effective risk management tools. To mitigate these risks, agricultural insurance has been identified as a crucial risk management strategy. The agricultural insurance market in Albania remains underdeveloped, with low uptake among farmers. This research investigates the challenges and opportunities within the Albanian agricultural insurance landscape. It examines the key risks confronting farmers, analyzes factors hindering market growth (including limited awareness, perceived high premiums, and inadequate product design), and explores strategies to enhance the accessibility and affordability of insurance products. By examining the interplay of risk assessment, premium calculation, and farmer affordability, the study aims to contribute to a more robust and inclusive agricultural insurance system in Albania.

Keywords – Agriculture, Insurance, Management, Production, Premiums, Risk.

I. INTRODUCTION

Agriculture has always been one of the most vital sectors of the global economy, providing food, raw materials, and employment for billions of people. However, farming is inherently a high-risk activity, as it is heavily dependent on factors beyond human control, such as climate conditions, natural disasters, pests, diseases, and market fluctuations [1]. These uncertainties make it essential for farmers to have risk management strategies in place to protect their livelihoods and ensure long-term agricultural productivity. One of the most effective tools for mitigating these risks is agricultural insurance, which provides financial protection against losses caused by adverse events [2].

Agricultural insurance is crucial for ensuring financial stability and food security in both developed and developing economies. Farming is a capital-intensive activity, requiring investment in land, seeds, fertilizers, machinery, and labor. However, a single natural disaster or pest outbreak can wipe out an entire season's harvest, leading to severe economic distress for farmers. Without insurance, many smallholder farmers struggle to recover from such losses, which can force them into poverty, debt, or even abandonment of agriculture altogether [3].

Furthermore, agriculture plays a central role in national and global economies. Ensuring the financial security of farmers through insurance is therefore not only a matter of individual well-being but also a national economic priority. When farmers have access to insurance, they are more likely to invest in modern farming techniques, adopt improved seed varieties, and expand production, ultimately leading to greater food security and economic growth [4]-[5].

II. ALBANIAN INSURANCE MARKET:

The insurance market in Albania started to develop in the 20s-30s, when the country knew a new phase of economic development. At the time, several insurance companies opened their offices in the main cities of Albania: Tirana, Durrës, Saranda, Korçë, or Shkodër. The Albanian merchants needed to insure their goods against risks such as fire or drowning [6].

The biggest insurance company was the Italian "Generali Assicurazioni" of Trieste, founded in 1831. The company opened an office in Durrës and later expanded the activity in the field of insurance but also in real estate in other cities such as Tirana, Shkodër, Vlorë, Fier, Berat, Sarandë, Gjirokastër, and Vlorë.

Another Italian insurance company was "The Fiume.". The main office of this firm was in the city of Fiume or Rijeka, today belonging to Croatia. The company was incorporated with the National Insurance Institute of Italy. The company offered an insurance policy for fire, gas explosion, theft, peril, transportation, and others.

Another company, "Riunione Adriatica di Sicurta," was created in Trieste. The company, with a capital of 100 million lire, had several offices in Albania and operated in life insurance, fire, civil liability, disaster, land and sea transport, etc.

These companies were active in Albania until the end of the Second World War, when the change of the political and economic system forced them to depart from Albania. During the communist period, 1945-1990, the insurance market becomes fully state-owned, like all other sectors of the economy. The insurance was exclusively managed by the state-owned INSIG, which held a monopoly over all types of insurance. After the 1990s, the Albanian insurance industry proceeded from a centralized, state-controlled system to a liberalized, competitive market [7].

In 1995, Albania passed its first law on insurance, which initially established a foundation for an open and competitive market, and in the early 2000s, INSIG initiated the privatization process, which was completed in 2009. A few private insurance companies entered the market, such as Sigma, Sigal, Intersig, Eurosig, Albsig, and many others. The field of insurance has been expanded, such as life insurance, health insurance, property insurance, and compulsory vehicle insurance [8].

III. PRODUCTION DATA. DEVELOPMENT AND RISKS

Agriculture is of prime importance in the economy of Albania, considering its contribution to GDP (23%) and employment (40%). The total area of Albania amounts to 2.8 million ha, out of which 699,021 ha are agricultural lands, or 24% of the total cultivated over the years, while meadows and pastures occupy 16%, lands (non-productive, urban, and internal water bodies) occupy 15%, forests occupy 36%, and others occupy 9%, figure 1. The agriculture sector is generally dominated by small and family farms, the average farm size being about 1.2 ha [9]-[11].

The country's climate allows the cultivation of cereals, fruits, vegetables, and fodder crops. Anyway, despite these favorable climatic conditions and abundant water resources, the crop sector in Albania remains relatively underdeveloped and faces a number of challenges, including low productivity, limited areas of cultivation, highly fragmented land ownership, a low level of mechanization, negative climate impacts-mostly flood and drought conditions-and a generally low level of phytosanitary controls that limit agricultural export [12]-[13].

Main constraints to the agriculture in Albania include:

- migration from rural areas
- very small holding sizes - 1.2 ha on average, when 14 ha in EU
- very poor marketing of the produce
- lack of irrigation and drainage
- low technological levels
- weak organization of farmers and low development of processing industry.

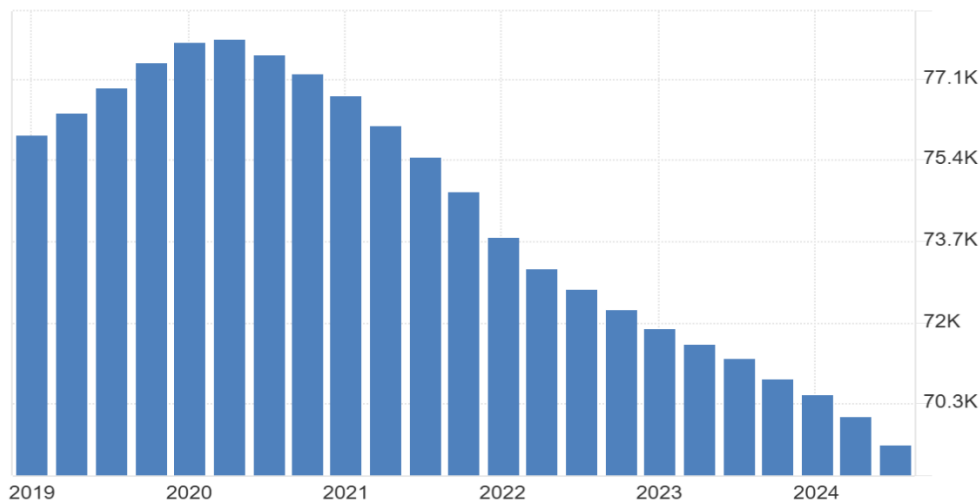


Figure 1. GDP from Agriculture in Albania (ALL Million)
 Source: <https://tradingeconomics.com/albania/gdp-from-agriculture>

The industry is under the threat of risks, such as drought, flooding, pest infestation, and price variability, which seriously could impact agricultural production and farm incomes. Such risks have been a constant threat to agricultural production, affecting yields and the overall supply chain and finally the livelihood of all those dependent upon farming [14].

A systematic literature review showed that farmers consider the following risks most serious: weather risks 55%, biosecurity threats 48%, and human risks 35%. Their risk perception is predetermined by personal experiences, socio-economic status, available information, and cultural background figure 2.

These broadly include:

- **Natural Disasters and Climate Change Impacts:** Albania's geographical location and climatic conditions make it vulnerable to various natural hazards. These include droughts, floods, and extreme weather events like frost and hail, which can severely damage crops and livestock [15]-[16].
- **Pest and Disease Outbreaks:** This may cause serious destruction of crops and livestock, leading to massive losses among the farmers. The increased prevalence of new and invasive species, coupled with changing climatic conditions, complicates the management of pests and diseases [17]-[18].
- **Market Risks:** Farm incomes may be seriously affected by changes in the market prices of agricultural products. Farmers are usually exposed to price volatility arising from global market trends, shifting consumer demand, and trade policies. Such volatility in prices complicates planning and investment decisions for farmers [19]-[20].
- **Financial Risks:** Access to finance is still a serious issue for most farmers in Albania. Lack of credit and other financial services keeps them behind modern technologies, farm infrastructure, and, most importantly, from doing effective management of risk. High production costs and low-profit margins further heighten this vulnerability [21]-[22].
- **Institutional and Policy Risks:** Weak institutional capacity, insufficient infrastructure, and lack of appropriate policies are potential barriers to formulating and implementing efficient risk management strategies. A lack of reliable data on agricultural production and risks makes it difficult to design appropriate insurance products and assess farmers' needs [23]-[24].



Figure 2. Five major risks
Source: [23]

IV. MATERIALS AND METHOD

The study is based on the mixed-method approach to investigating challenges and opportunities regarding agricultural insurance in Albania. It combines quantitative and qualitative methods for gathering and analyzing data in an attempt to fully describe the problem.

1. **Literature Review:** A background review of the existing literature on agricultural insurance, risk management, and the Albanian agricultural sector will be done. This will provide the conceptual framework for the research, identify the key themes and debates in the research area, and inform the articulation of research questions. The literature review shall draw on academic journals, reports from international organizations, and policy documents [25]-[27].

2. **Collection of Data:** Data will be collected from the existing sources relating to agricultural census, statistical reports, and data from the insurance market. In case of missing data (completely in random) data imputations method is implemented. Anyway, in such cases, (not is this case) a necessary amount of data should be provided to have reliable results [28]-[30].

3. Data Analysis: Descriptive statistics shall be used to analyze the survey data and identify influencing factors in the farmers' adoption of insurance. The absence of official data regarding the premium of agricultural products indicates that insurance of agricultural production remains extremely low.

As such, the total gross written premiums of agricultural production reached the value of only 7.1 million ALL in 2023 which is very low. The reason behind such a low amount is identified as the high cost of insurance as the primary factor hindering the market's development [31], figure 3,4.

Several factors to assess the premiums should be under consideration:

- **Type of Crop and Livestock:** Not all agricultural products bear the same level of risk. For example, crops susceptible to weather events or disease outbreaks will have higher premiums than crops that are not as vulnerable. Similarly, livestock being insured against specific diseases or mortality will be a factor in determining premiums. Multicriteria Decision Analyses (Making) MCDA/MCDM may help decide what crops are more suitable regarding profits, costs, and level of risks [32-35].
- **Level of Coverage:** The extent of coverage selected by the farmer has a direct impact on the premium. The higher the coverage level, which translates to more financial protection, the higher the premium will be. Farmers have to trade off their risk tolerance with their ability to pay the premium [36]-[37].
- **Administrative Expenses:** The cost of providing insurance, including, among other things, marketing, distribution, and claims processing costs, is factored into the premium. Efficient administration can keep the premium competitive. The integration of smart administration using ICT tools, such as automated claims processing, AI-driven customer support, and data analytics for risk assessment, can further enhance efficiency, reduce operational costs, and improve service quality [38]-[40]
- **Government Subsidies:** Government subsidies may also be an important means of making agricultural insurance affordable. By subsidizing a portion of the actuarial premium, the subsidy will encourage farmers to buy insurance and improve their risk management. In addition to insurance support, governments can assist farmers with pension schemes to ensure financial security in retirement [41]. By integrating pension contributions into agricultural subsidy programs or providing specialized retirement plans for farmers, policymakers can help address long-term financial stability. Digital financial tools and mobile banking can further facilitate pension savings, making it easier for farmers to contribute regularly and access funds when needed [42]
- **The evolution of technology in managing finances** has significantly transformed the insurance industry. From traditional bookkeeping to cloud-based financial management systems, advancements in fintech, blockchain for secure transactions, and AI-powered predictive analytics have improved decision-making, fraud detection, and operational transparency. These innovations contribute to optimizing cost structures, ensuring accuracy in financial reporting, and enhancing customer experience [43]-[45].

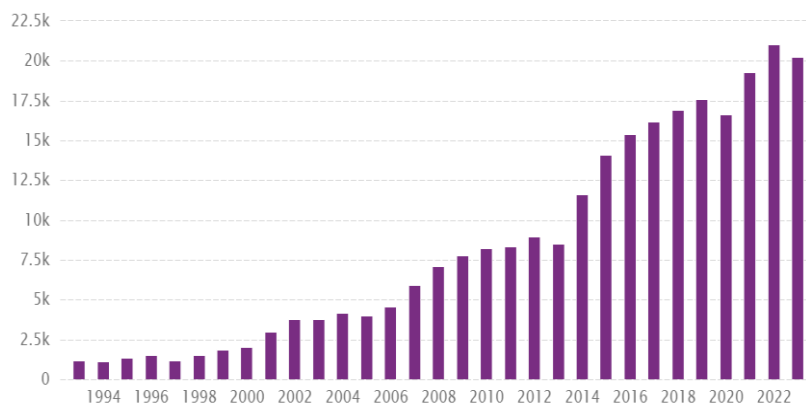


Figure 3. Albania Insurance Written Premium from 1993- 2023, (ALL Mn)

Source: <https://www.ceicdata.com/en/albania/insurance-written-premium/insurance-written-premium>

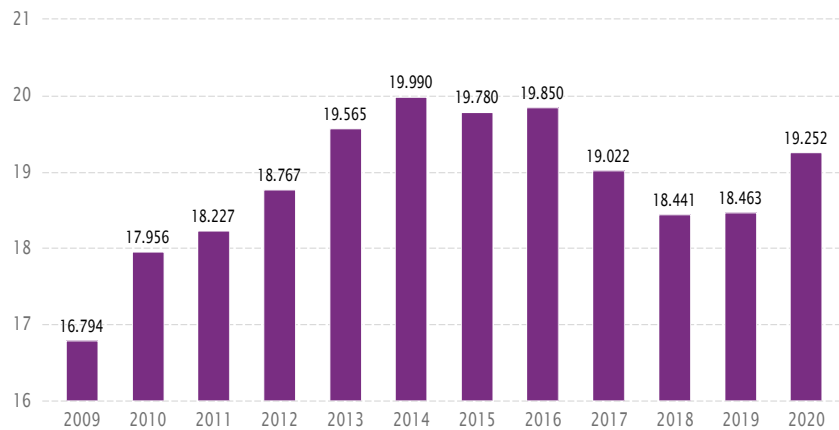


Figure 4. Albanian Agriculture production, % of total GDP:

Source: <https://www.ceicdata.com/en/albania/gross-domestic-product-share-of-gdp/al-gdp--of-gdp-gross-value-added-agriculture>

V. DISCUSSION

Agricultural insurance is an important tool in risk management for farming, ensuring financial stability and resilience against natural disasters, climate variability, and market fluctuations. Several factors determine the willingness of farmers to embrace agricultural insurance. These include the quality of insurance services, policy design, socio-economic conditions, education levels, and government involvement. In Albania, poor financial literacy, distrust of insurance providers, and a lack of relevant state intervention explain the low level of adoption of agricultural insurance. On top of this comes the distance of farmers from insurance offices and the general lack of information about insurance policies. The historical development of the Albanian insurance market follows the line of relatively good insurance development in the first decades of the 20th century, then stagnation during the communist regime. A new impulse in its development has been given by the liberalization of the insurance sector in the 1990s, when private companies entered this market, increasing the types of insurance coverage. Agricultural insurance remains undeveloped, though, in many of today's economies when related to property or even vehicle insurance coverage.

Given the significance of agriculture in Albania's economy, it is very important that proper risk management strategies are considered. The country has a high percentage of land allocated to agriculture, but farming activities are highly exposed to climatic and market risks. Unless adequately insured, these risks will continue to put at stake both individual livelihoods and national food security. Drawing from international best practices, it is quite evident that more government support, subsidies, and public-private partnership could boost the uptake of agricultural insurance in Albania.

VI. CONCLUSION

Agricultural insurance is among the most important means of farming risk management, providing financial stability and resilience against natural disasters, climate variability, and market fluctuations. Several factors are at play in determining farmers' acceptance of agricultural insurance. These include, but are not limited to, the quality of the insurance services, policy design, socio-economic conditions, information and education levels, and government involvement.

The reasons for the poor level of adoption of agricultural insurance in Albania could be poor financial literacy, distrust of insurance providers, and the lack of relevant state intervention and insurance understanding. To these facts are added the distance of farmers from insurance offices and the general lack of information about insurance policies.

The historical development of the Albanian insurance market follows the line of relatively good development in the first decades of the 20th century, then stagnation during the period of the communist regime 1945-1990. A new era of development has been started by the liberalization of the insurance sector in the 1990s, when private companies entered this market, increasing the types of insurance coverage. Given the strategic importance of agriculture in the economy, due consideration should be paid to appropriate risk management strategies. Despite the large percentage of the land allocated for agriculture in Albania, farming is highly exposed to climatic and market risks, and unless adequately insured, these are bound to put at stake livelihoods and food security at personal and national levels.

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