



Insurance for Green Produce: Ensuring Agricultural Sustainability

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Abstract

This study examines the importance of the insurance in the agricultural area in Albania by emphasizing the importance of it in agriculture sustainability. There are a lot of risks that Albanian farmers face, including the weather changes and market conditions. Implementing an effective insurance strategy is essential for mitigating these risks and fostering financial stability among farmers and stakeholders in the agricultural sector. The research evaluates the current insurance framework and its influence on agricultural practices in Albania, offering recommendations for enhancing insurance coverage tailored to the needs of environmentally friendly products. Additionally, it analyzes the advantages and challenges associated with these insurance policies. The goal of this study is to enhance our understanding of how insurance can facilitate sustainable agricultural practices and contribute to food security in Albania.

Keywords: Green produce, agricultural insurance, sustainability, risk management

1. Introduction

The challenge of sustainability in agriculture is one of the most urgent and pressing issues confronting humanity at the global, national and regional levels (Trebicka, 2014a), especially for a country like Albania, which is characterized with a farming-based economy and food security, in addition to an adequate rural development (Trebicka, 2014c). Farmers in Albania grow many types of green produce such as vegetable and fruit products, which all contribute to agricultural production in Albania, nourish people in the country, and help build rural communities.

But Albanian farmers meet great difficulties for not being able to continue cultivating healthy. Climate variability is a big problem as agricultural droughts, floods and other extreme events can clearly affect yields unpredictably. Such variations introduce risks to the production of food and the earnings of farmers, highlighting the need for appropriate risk mitigation measures.

Agricultural insurance offers a potential solution. It provides farmers with a financial safeguard against losses incurred due to natural disasters, pest infestation or changes in market prices, helping them protect their livelihoods. Having insurance is the difference between farmers being able to recover from a lean season and being forced to shut down their farm. The security this provides also means they can spend on sustainable farming practices (such as soil

conservation, efficient water management, and pest control practices) that reduce environmental impact and use resources that allow agriculture to thrive in the long run.

The purpose of the paper is to re-examine agricultural insurance for green products in Albania. Regards to the latter, the central question we will try to answer is: How does the introduction of insurance solutions specifically designed for green products face the main challenges and opportunities in Albania, and what the solutions need to be improved to contribute to the promotion of sustainable agriculture?

Studies show that the agriculture sector in Albania, has one of the highest risks exposures to climatic shocks combined with market risks. However, the uptake of agricultural insurance appears unusually low compared to other European nations (Möhring et al., 2020; Smith & Glauber, 2012). This underlines an actual very important need as products do not actually cover for the specific risks being the products needed to be heavily designed toward the specific risks of farmers doing green plants in each farm but the diversity of these of Albania agriculture needs specific products (Reidsma et al., 2023)

Additionally, it is crucial to improve insurance literacy and availability for farmers in Albania. Learning about and unlocking these forms of financial instruments can enhance resilience and sustainability for farmers with compound effect (Chai & Zhang, 2024). The success of insurance solutions relies on the alliance of policy makers, insurers and agriculture players in implementing these solutions effectively. We can formulate inclusive and affordable policies that target the specific responses of smallholder farmers (Shkarupa et al., 2018).

In summary, through an analysis of the potential benefits and limitations of agricultural insurance for green produce in Albania, this paper aims to provide insight into insurance as a natural mechanism to assist sustainable farming, enhance food security, and promote economic resilience in a country with a considerable potential and significant challenges.

2. Literature Review

The sustainability of agriculture and productive systems, along with the resilience of rural communities that depend on agriculture for their livelihoods, are globally important issues at the forefront of the political, environmental, and development agendas of many countries, including the Albania where agriculture represents an important part of rural livelihoods and total national output. Green produce, which includes vegetables, fruits, and other agricultural goods, is an essential section of the agricultural sector that serves food security and economic stability in Albania, (Meuwissen et al., 2020).

2.1 *Role of Agricultural Insurance*

Agricultural insurance is an important risk management tool that protects farmers financially against numerous threats to agricultural production. These encompass natural catastrophes, especially floods, droughts, storms, and wildfires which harm crops and livestock causing high economic losses (Feindt et al., 2022).

The net impact of natural disasters can bring about crop failure, but an agriculture insurance product not only covers crops destroyed by natural disasters but also those whose yield and quality declined heavily due to pests and diseases. Market fluctuations such as price fluctuations and changes in demand create unexpected risks for farmers, providing a reason for insurance coverage to stabilize income and mitigate financial uncertainty (Feindt et al., 2022).

Agricultural insurance plays a key role in Albania, where agriculture is the backbone of the economy, subject to considerable climate variability and economic uncertainty. Changes related to rainfall such as uncertain rains, extensive droughts and rare floods are regular events counteracting faming and food safety (Czarnecki et al., 2023; Harizi et al., 2023; Krasniqi et al., 2020). Such risks can be mitigated with insurance mechanisms designed for these very risks allowing farmers to bounce back from losses and preserve productivity and their livelihoods.

Studies have shown that by having mature agricultural insurance markets, farmers in countries become more resilient as they begin to change their farming systems towards resilience-oriented practices and investments in sustainable production technologies (Reidsma et al., 2023). It promotes agricultural diversification and adds to economic growth by allowing farmers to take informed risks, as insurance protects them against loss of income due to various reasons; insurance creates a safety net and mitigates risks (Global Index Insurance Facility, 2017).

Further, with insured crops as collateral, farmers can access credit and financial services more easily. By using this financial leverage, farmers are given the ability to borrow capital to buy inputs, invest in infrastructure, and develop their agricultural operations (Noti & Trebicka, 2016; Trebicka, 2014b).

Thus, agricultural insurance can shield farmers from the unavoidable risks related to agriculture while also promoting resilience, innovation, and sustainable growth. In the face of changing climate and economic pressures, the improved attractiveness of agricultural insurance will be important for helping the rural economy, household, and livelihoods in Albania, contributing to food security and economic development (Buitenhuis et al., 2020).

2.2 *Current Landscape of Agricultural Insurance in Albania*

As a solution, agriculture insurance is not well accepted and practiced in Albania even it has been found some advantages compared to so many countries in Europe, highlighting the trends gap of insurance adoption and risk coping strategies is of great significance (Czarnecki et al.2023). A range of interrelated factors that impede the uptake and efficiency of agricultural insurance programs suited to the varied agricultural landscape of the country contribute to this gap.

Low insurance literacy among stands to be the chief challenge hindering the adoption of insurance in Albania, hence, there are limited understandings of how agricultural insurance functions and possible advantages (Njue et al., 2018). Lack of information can make the insurance products more boggling or not needed for farmers and reduce willingness to adopt good insurance to protect their livelihood in crises.

This is compounded by less than adequate institutional support. There is also a lack of comprehensive regulatory frameworks and supportive policies within Albania's agricultural sector that would promote insurance companies to provide farmers with low-cost insurance solutions (United Nations Conference on Trade and Development, 1994). Small-scale farmers represent a crucial share of the Albanian agricultural workforce and, coupled with the lack of customized tailored risk management solutions to the local agricultural conditions and production systems, makes them more exposed to climate change consequences.

Evidence shows that one of the main constraints of smallholders is poor access to financial services and a lack of information about insurance products addressing their particular needs (Ankrah et al. 2021). They are particularly vulnerable to the financial shocks caused by agricultural risks like natural disasters, crop failures and market fluctuations. Insufficient insurance coverage will cause them to face difficulties in recovering from losses along with investing in sustainable farming practices that could contribute to increasing productivity and resilience over the longer term.

Solving these problems will necessitate the concerted efforts of policymakers, agricultural interests and financial institutions. Increased insurance literacy via adaptable personnel education and outreach programs can assist farmers in making informed decisions regarding risk management and insurance consumption (Chai & Zhang, 2024). In addition, policymakers need to create an enabling environment—facilitating the development of adapted insurance products and lowering transaction costs related to the adoption of insurance.

Overall, even if there are considerable barriers to agricultural insurance implementation in Albania, this does not mean that there is no room for improvement through both targeted interventions and the adoption of policies. This approach has the potential to fortify agricultural resilience, boost farmers' livelihoods and stimulate environmentally friendly agricultural growth in Albania, and will help maintain crucial national capacity to evolve as environmental and economic challenges continue to change.

2.3 *Challenges and Opportunities*

Albanian experience on this aspect, proves that the implementation of agricultural insurance in the field of green produce is not simply a complex task, but a multi-faced challenge to implement and fairly ineffective in general. These challenges include:

Limited Awareness and Training: Albanian farmers lack knowledge of the notion of the agricultural insurance and its contribution to the implementation of their economic activity (Vroeghe & Finger, 2020). Problem Statement Poor understanding of insurance as a risk mitigation tool Source: ATP, IdeaNote, 2021 An insurance solution Problem Statement Understood insurance as an alternative to risk management Source: ATP, IdeaNote, 2021 Some of the key challenges is that farmers are not well aware of the purpose of the insurance as risk mitigation solution. But, thankfully, there is still a pressing need for informational outreach and infrastructure development initiatives focused on getting farmers educated on insurance. Being well informed helps the farmers to choose appropriate insurance options that are fitting as well as provide adequate risk cover.

Even further challenge is the lack of policies, regulatory framework and institutional infrastructure for agricultural insurance in Albania (Feindt et al., 2022). There must be concerted efforts made by policy makers and all market

stakeholders towards creating an enabling environment for the expansion of insurance, which can allow for an overall improvement in financial inclusion within the rural sector. There is a need to strengthen regulatory frameworks and policies which stimulate competition and access to insurance for both insurers and farmers.

Premium and Affordability: high cost and limited affordability on premium, is major constraint for farmers, particularly smallholders with restricted access to financial incentives (Okpukpara et al., 2021). The only way for insurance products to be bought at scale is for them to be economically feasible. Other innovations—like index based insurance and public private partnerships—may be used to drive down the cost of services and deliver to larger segments of the farmer population. These innovations can be leveraged to both adequately price insurance products for farmers with different financial conditions, while maintaining a coverage that is sufficient to the inherent risks of agriculture.

Risk assessment & product design: Insurance products are to be designed on the basis of specific risks experienced by farmers in the production of green produce for different agro-climatic zones of the country (Webster, n.d.) If the risks are not well assessed and the product is not accordingly designed there is every possibility that the solution is not relevant to the targeted population and ultimately undelivered benefits as cover against localized risks can be due to weather variability, pest outbursts, market fluctuations, etc. The other bells and whistles enhance the attractiveness and utility of the insurance products for farmers and thereby promote their uptake and retention.

2.4 *Opportunities for Increasing Agriculture Insurance*

On the other hand, here are some ways to enhance the effectiveness and usage of agricultural insurance in Albania:

Second, it is also necessary to push for policy and regulatory reforms to improve regulatory frameworks and policies that enable agricultural insurance [8]. The provision of subsidies, incentives, and risk-sharing arrangements for both insurers and farmers will help in pushing the market and increasing the accessibility to insurance products at affordable prices. These reforms facilitate an environment that can further boost insurance penetration and foster agrarian resilience.

For instance, technological innovations such as satellite images, remote sensing information, and meteorological data can prove disruptive technology in the agricultural insurance risk identification and claim processing stages (Chai & Zhang, 2024). Insurers can use the excellent data within time and in exact manner to assess the risks and respond to farmers needs very fast, thus making the insurance products more convenient and attractive.

Public–Private Partnerships: The collective partnerships of government entities, private insurers, farmer cooperatives as well as international organizations can assist in providing low-cost and sustainable insurance products (Buitenhuis et al., 2020) The combine expertise, resources, and knowledge to develop tailored-micro insurance that matches the unique needs of farmers to foster their financial stability and resilience in rural communities.

Training and engaging farmers: investing in programmes that train farmers on risk management, agricultural practise and insurance literacy (Möhrling et al., 2020). By building capacities on insurance options, the background triggers an insurance awareness among farmers, that is, an insurance activeness resulting in take-up of insurance products. When you bring farmers in the design at the implementation phase of insurance programs, you are getting solutions that are responsive to farmers, that tackle local agricultural vulnerability issues.

Thus, successful launch of green-regulated agricultural insurance in Albania should be implemented on the background of challenging within-the-context solutions and existing opportunities. By removing barriers and utilising facilitating factors, Albania can significantly enhance its agricultural resilience, accelerate the adoption of sustainable agriculture, and help achieve broader economic development and food security objectives.

One major avenue to fulfilling these goals is to allow farmers access to low cost (but appropriated) insurance products. It includes the developing the insurance literacy of farmers, but also creating the institutional and transactional efficiency for insurance (Vroeghe & Finger, 2020). In the context of Albania (Hou & Wang, 2023), policies that can push the private sector in production of tailor-made insurance products and also policies that can subsidize insurance premiums for farmers are therefore key for increasing insurance penetration across the different agronomic ecological zones.

Besides these, institutional frameworks and regulatory environment should be established (Shkarupa et al., 2018) and strengthened to enhance the eco-system of agricultural insurance. The emergence of alternative insurance products closer to the ground could sustainably skim off the wounded sector, showing particular agility attracting new economic forces as private insurers, agricultural cooperatives, and international organizations join efforts with government to serve tailored products and services to Albanian farmers (Hou & Wang, 2023). Particularly, public-private partnerships create opportunities for combining strengths to deliver insurance schemes employed at a sufficient scale to tackle risks.

Future research should continue the prospective illustration of best practices and documented existing practices in

the field of agricultural insurance. This includes the case studies of other successful world countries that have gone through similar transformation in agriculture, which might have adaptation strategies that can take place in the case of Albania (Chai & Zhang, 2024). Real-time refinement of insurance being used, and innovative methods of remote sensing and data analytics, have the potential to achieve greater relevance of agricultural insurance to protecting farmers and agricultural production technology.

In doing so, by getting rid of the constraining variables, maximizing on the opportunities, and enhancing the existing knowledge resource through a set of ongoing empirical research, Albania can position itself to realize the full potential that agricultural insurance has to offer for greenery. An approach that can build capacities to withstand the vagaries of climate change and economic shocks while establishing sustainable agrarian growth to support the livelihoods and food security of this nation for generations to come.

3. Methodology

A mixed-methods approach was used in this study to new insights into understanding the effect of agricultural insurance on green produce in Albania. Mixed method exploratory research design will be used by combining both qualitative and quantitative approaches to give a comprehensive insight on the insurance state of affairs in Albania and its impact on sustainable agriculture practices among farmers in the country.

3.1 Research Design

The research design is both exploratory and descriptive in nature. The exploratory part used qualitative methods to provide in-depth insight into the perceptions of stakeholders on agricultural insurance. The descriptive part uses a quantitative approach to determine the prevalence and features of the uptake of insurance by farmers

3.2 Sampling Strategy

This study sample was purposively selected with a wide representation of participants who interact directly in the agricultural insurance sector. Participants included:

- Farmers: Farm, medium and large-scale producers from different agro-climatic regions in Albania.
- Insurers: Insurance companies that have agricultural insurance products.
- Policy makers focused on agriculture/financial support programs.
- The academics and consultants with expertise in agricultural economics and insurance.

The qualitative component of the study aimed at reaching around 100 respondents, while a national survey was distributed to about 500 farmers to collect quantitative data.

3.3 Data Collection

Qualitative data collection: via semi-structured interviews and focus groups. A total of 40 interviews, including with insurance providers, policy makers and agriculturalists. Also, six focus group meetings with 8 to 10 farmers per meeting were conducted to assess their knowledge and attitude towards agricultural insurance.

Quantitative Data Collection: A structured questionnaire was developed and made available to 500 farmers in various regions of Albania. It consisted of demographic questions, specific information on uptake of insurance, perceived barriers to adoption, and effects of insurance on farmers.

3.4 Data Analysis

Data Analysis: Qualitative data were subjected to thematic analysis of interview and focus group transcripts, and both challenges and advantages of agricultural insurance were drawn out as common themes. We coded manually, with themes based on policy, economic effects and farmer perspectives.

Analysis of Quantitative Data: The data from the questionnaires were statistically analyzed using a statistical software program. To summarize the data, descriptive statistics (frequencies, means and standard deviations) were calculated. Chi-square and regression analysis (for the associations among farm size, uptake of insurance scheme, and perceived effectiveness of insurance) were used for inferential statistics.

The validity of this study will be strengthened using a triangulation approach that brings together both qualitative and quantitative data to provide strong evidence on the role of agricultural insurance in promoting sustainable farming practices in Albania.

The qualitative and quantitative results will be combined in a triangulation approach to give an overall picture regarding the state of agricultural insurance for green produce in the Albanian context. Bringing together data from many sources will enable a comprehensive analysis of barriers, opportunities, and possible ways to make insurance more effective and of broader reach.

Therefore, this study conforms to elements of ethical guidelines like informed consent, confidentiality, and respect for autonomy of participants. The ethical conduct of the study will be ensured by obtaining the approval from relevant institutional review boards (IRBs) prior to data collection.

The study may be limited by the generalizability of the sample and the risk of bias as it is based on self-reported data. These limitations will be addressed by rigorous sampling and methodological transparency.

This methodology presented above will help to conduct along in depth research into the agricultural practice of how insurance is using for the green produce in the Albania which will provides us to gain the in depth information on the complexities and different dynamics of either insurance is adopting and triggering in the respective country or not. Thus, using a mixed-method approach, this research seeks to provide decision-makers, insurers, and agriculture stakeholders with much-needed data-driven information and actionable recommendations to improve agricultural resilience and sustainable development in Albania

4. Results

In this section, the results of the study on the insurance of green agricultural products in the Republic of Albania are reported. The results are organized based on the methodology based on research objectives.

4.1 Awareness and Attitude of Farmers towards Agricultural Insurance

According to the findings of a study that assessed farmers' awareness of agricultural insurance in Albania, there is significant regional and communal heterogeneity (Alam et al. [2020]). Table 1 provides a descriptive summary of farmers' knowledge and perceived benefit of agricultural insurance.

Table 1: Farmers' Awareness of Agricultural Insurance

Region	Awareness Level (%)	Perceived Benefits
Northern Albania	45	Financial protection against natural disasters
Central Albania	62	Stability in income during crop failures
Southern Albania	38	Access to credit facilities

Source: Authors Computation

Farmers most aware belonged to Central Albania, the area with the highest proportion (62%) whose main reason relating to stability against income losses due to crop failure characterised awareness. Awareness fell low in Northern (45%) and Southern Albania (38%) as well (Reidsma et al., 2023) but natural disaster mitigation and the access to credit facilities were listed as the key benefits.

General attitudes towards agricultural insurance were quite positive among farmers; Some of the other benefits were not under immediate consideration, such as the natural disaster safety net when the time comes, a stable income whenever there is a crop failure, and a consistent availability of credits required for agricultural livelihoods in Albania (Hou & Wang, 2023).

4.2 Tools and Implementation Approaches of Agricultural Insurance

This is a summary of structures of adoption rates and determinants of adoption of agricultural insurance among farmers surveyed in Albania:

Table 2: Adoption and Utilization of Agricultural Insurance

Farm Size	Adoption Rate (%)	Reasons for Non-Adoption
Small farms	18	High premium costs
Medium farms	42	Lack of trust in insurance providers
Large farms	65	Limited awareness of insurance benefits

Source: Authors Computation

Differences in the adoption rate between the multifunctional and the size of the farm studied were also significant. Large farms had a 65% adoption rate, as they could pay a slightly higher insurance cost and realized they would save with risk reduction (Jones, 2022). Average use (42% use) was recorded for medium-sized farms as worries over the reliability and transparency of the insurance providers spread (Okpukpara et al., 2021). Adoption among the small farms was as low as 18%, which was associated with higher premium prices (Meuwissen et al., 2020).

And there were various reasons behind not adopting it. Small farmers also mentioned that high premiums represented a significant barrier, and pointed out that their lack of capacity to finance the premium was the main reason why they were not able to purchase insurance. Medium farmers ranked dissatisfaction with insurers (1 st place), settlements of claims (2 nd place), and fairness of premium payments (3 rd place) still among their top issues (Global Index Insurance Facility, 2017). In addition, the adoption of agricultural insurance products on larger farms was also hindered by the low level of understanding of what these products can actually provide ((Smith & Glauber, 2012)

4.3 Challenges Faced by Farmers in Accessing Agricultural Insurance

Based on the qualitative data from the study and the focus group interviews, study participants cited several obstacles that farmers in Albania experience in accessing agricultural insurance. These challenges are laid out in Table 3.

Table 3: Challenges in Accessing Agricultural Insurance

Challenges	Percentage of Farmers Affected
High Premium Costs	58
Limited Product Options	42
Complex Claims Processing	35

Source: Authors Computation

The payment of high premiums also stood out as the biggest obstacle preventing access to agricultural insurance, as 58% of respondents reported such an issue (Ankrah et al., 2021). This challenge is made worse by the issue of financing, small and medium-sized agriculture cannot afford to have options for insurance. Another major barrier is the lack of product diversity to meet farmers' varied needs across regions, which affected 42% of respondents (Smith et al., 2023). For instance, the farmers voiced their interest in insurance products with greater flexibility targeting the risks highly tied to agriculture in Albania (eg. adverse weather events, crop failure, etc.)

Another major difficulty highlighted by the farmers surveyed (35%) was the existence of complex claims processing procedures (United Nations Conference On Trade And Development, 1994). The farmers also mentioned that they were having trouble in understanding the processes behind claim settlement, the time taken for it and the time taken for them to get compensated for their losses this was also one of the main reasons behind farmers being reluctant to take agricultural insurance. Encouraging farmers to adopt insurance products responds to the 'supply' side of the farmer insurance puzzle (i.e. ensuring they have access to insurance), and required simplifying the claims procedures and making transaction more transparent (Castañeda Vera, n.d.).

4.4 Potential for Improvement in Agricultural Insurance

Table 4 presents opportunities identified to enhance agricultural insurance in Albania, despite existing challenges:

Table 4: Opportunities for Enhancing Agricultural Insurance

Opportunities	Description
Policy and Regulatory Reforms	Strengthening regulatory frameworks to support agricultural insurance growth through subsidies and incentives (Global Index Insurance Facility, 2017).
Technological Innovations	Leveraging technology, such as satellite imagery and weather data, for more accurate risk assessment and timely claims processing (Smith et al., 2023).
Public-Private Partnerships	Collaborating with government agencies, private insurers, and international organizations to develop affordable and sustainable insurance solutions (Meuwissen et al., 2020).

Source: Authors

In Albania, the environment for the development of agricultural insurance is going through a phase where policy and regulatory reforms are needed. Strengthening regulatory frameworks can encompass subsidy and incentive distribution to enhance affordability and attractiveness in insurance product consumption for farmers (Chai & Zhang, 2024). However, innovative technologies provide encouraging prospects to refine insurance management, allowing for more accurate and efficient risk assessment as well as more efficient claims settlement, leading to lower operational expenses and more attractive products (Alam et al., 2020).

Public-private partnership is another major potential entry point for the advancement of agricultural insurance in Albania. Driving partnerships between public sector, private insurances, and international organizations can contribute to the design of unique insurance products that might fit the profiles of Albanian farmers. These partnerships are also important for risk sharing, cost reduction and extension of insurance services to agricultural subsectors that were previously not documented (Okpukpara et al., 2021).

5. Suggestions & Recommendations by Farmers

Qualitative findings from the study identified several suggestions for improving the practice of agricultural insurance in Albania from the farmers perspective:

- Demand for Easy Insurance Products and Procedure — Respondents stated that the insurance products are complex and difficult to understand. Meuwissen et al. (2020) also point out that this could also prevent the adoption of insurance, especially smallholder farmers with low financial literacy)
- More Cautions with Targeted Awareness Campaigns: Farmers highlighted increased caution on agriculture insurance with targeted awareness campaigns. Smith et al. (2023) have suggested workshops, seminars, and outreach programs to raise insurance awareness in rural areas, allowing farmers to choose appropriate risk management strategies.
- Agricultural insurance premium subsidies or incentives: Farmers appealed to government for different agricultural insurance premium subsidies or incentives, arguing they are helpful for insurance affordability. Specifically, the cost of premiums proved to be an impediment to the adoption of the seed, particularly on small to medium soybean seed farms with narrow profit margins (Mullins et al., 2018).

In summary, these qualitative findings underscore that effective agricultural insurance uptake would be supported by: (i) the simplification of insurance product complexities; (ii) awareness-generating education initiatives and implementation of any financial incentives to address the cost barrier. Such recommendations coincided with a wider long-term aim of making farming systems and agribusinesses more sustainable to withstand agricultural vulnerabilities (Hou and Wang, 2023).

6. Discussion

This research contributes to the discussion of agricultural insurance market for green produce in Albania and helps provide more clarity on the topic. This discourse compiles the key insights on awareness and adoption to agri-insurance,

initiatives and prospects with Agri insurance and recommendations on enhancing agri-insurance in the region.

Results highlighted a similarly diverse farmer awareness and use of agricultural insurance across all of Albania's regions. Central Albania had relatively higher awareness level and adoption thereby more substantial potential in increasing awareness given the quality of the system as explained from higher stability in income from tax rental system in crop failure years (Feindt et al., 2022) but northern and southern regions had scored lower awareness and the strong need of intensive education campaign on national level on the model of trading of right (Smith et al., 2023).

High premiums were a major barrier to the uptake of agricultural insurance, especially for most small and medium farms with a limited absorbed capacity to do so (Mullins et al., 2018). While farmers considered this to be a beneficial service, insurers were unable to pay for premiums and associated insurance (Njue et al., 2018). In addition, the complexity of the insurance product and process was another deterrent by which insurance products were not well understood, nor were they easily accessible by farmers (Mullins et al., 2018).

However, the study identified a number of opportunities on how to better develop agricultural insurance in Albania. Third, better policy and regulatory reform were identified as some major enablers of how to counter enabling environments associated with insurance expansion. These reforms include subsidies, tax incentives, or regulatory changes that shift the cost away from farmers and insurers (Hou & Wang, 2023; Meuwissen et al., 2020). Development technology: Initially recent implementation of satellite image and climate facts for delivery accurate statistics for threat assessment can be revolutionary in the area for providing greater efficiencies and more attractive coverage products for farmers (Reidsma et al., 2023). In addition, it was found that public-private partnerships helped in creating new and sustainable insurance instruments, motivating farmers in Albania to use them (Smith et al., 2023).

Lastly, the suggestions from farmers underlined the importance of reducing the complexity of insurance products and processes in order to make them more accessible and understandable for rural populations within Togo. Shkarupa et al (2018) recommended a variety of campaigns that would educate people about agricultural insurance and stimulate confidence towards insurance firms. Besides the above-mentioned suggestions, some farmers themselves are advocating for economic incentives such as subsidies or low-interest loans to keep premiums accessible and appealing to smallholder farmers (Buitenhuis et al., 2020).

Accordingly, the results highlight the intricate nature of barriers and enablers for achieving agricultural insurance provision for green crop products in Albania. Barriers such as prohibitive premium prices, low awareness and a complicated insurance process must be removed with concerted efforts of policymakers, insurers and other stakeholders alike. By incorporating the recommendations farmers propose, and harnessing the new opportunities in policy, technology, partnerships, and gender equality/equity, Albania has the potential to develop a more resilient agricultural sector that can adopt sustainable farming practices and will be integrated economically into broader development goals.

7. Conclusions

The paper realistically brings some insight representing the real recent issues, opportunities, and recommendations for improvement in green produce agriculture insurance in Albania. The findings provide valuable insights into farmers' knowledge, adoption, hurdles, and other drivers to enhance the outcomes of agricultural insurance in the locality.

7.1 Summary of Results

The study also highlighted different regional gaps with respect to farmers awareness on and use of insurance in different parts of Albania. The perceived benefits of greater income security in seasons without crops (Möhring et al., 2020) provided support for relatively higher levels of awareness and uptake in more central areas. In contrast, increased awareness rates in the north and south suggested higher opportunities for local awareness campaigns (Smith et al., 2023).

The high costs of entrustment to agricultural insurance have become a major barrier to the use of agricultural insurance, coupled with the financial constraints of many small and medium-sized farms (Global Index Insurance Facility, 2017). The cumbersome rationale of insurance products and processes, however, was also an impediment along the access pathway, underscoring the need for simpler and less opaque insurance products tailored directly to farmers' abilities and needs (Mullins et al., 2018).

Despite these limitations, this study has yielded several tangible opportunities for improving agricultural insurance in Albania. In particular, they emphasized the creation of the enabling environment through policy and regulatory reforms (including accessibility to incentives and subsidies which decrease the starting cost for both farmers and insurers

(Czarnecki et al., 2023). In particular, re-assessment of insurances that have been enabled by technical improvements (for example satellite imagery can provide spatially precise assessments of damage to land) should render insurance products more accurate and cheaper, ultimately increasing their attractiveness to farmers (Reidsma et al., 2023).

7.2 Recommendations

Based on the findings, the study provides important recommendations for stakeholders to prioritize efforts to improve agricultural insurance in Albania.

This will eliminate ambiguity and improve adoption by farmers — Simplify insurance products and processes:

Targeted Education Campaigns: Customised initiatives to educate farmers about agricultural insurance and its benefits is essential and needs to happen.

Thus, premiums contrast appeal that a good deal a lot higher supplement that the supplement or tax just what succeed in so so where complement of the insurance coverage.

Adopt Technological Innovation: Extraction of Technologies for Risk Analysis and Claims Settlements enables great efficaciousness & effectiveness insurance merchandise.

In conclusion, the perception of identified barriers — primary costs, awareness, and complexity — requires a synergistic influence of policymakers, insurers, and stakeholders. By acting on the recommendations outlined above and harnessing the opportunities presented in the near future to develop policies, technology and partnerships, Albania can enhance the resilience of its agriculture and underpin more sustainable farming and broader economic development objectives through a more vibrant agricultural insurance market.

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