Feasibility Study Report

Agriculture Risk Resilience Insurance Access Program in Malawi:
Bundling insurance with Affordable Inputs Program (AIP) in Malawi.

Lilongwe, **Malawi**

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Objective:

The specific objective of the feasibility study is to examine the demand side, supply side, and enabling environment to reach a conclusion on how to embed (bundle) climate risk insurance product(s) with Affordable Inputs Program in Malawi in line with international best practices to ensure scale and sustainability.

Submitted to

The Ministry of Agriculture and Food Security, Government of Malawi
Lilongwe, **Malawi**

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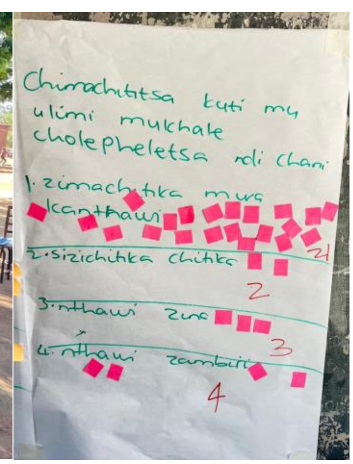

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1. EXECUTIVE SUMMARY

The agriculture sector in Malawi remains critical to the economy, supporting nearly 80% of livelihoods and contributing approximately 30% to the GDP. However, it is particularly vulnerable to climate-related risks, including droughts, floods, and erratic rainfall patterns. These hazards severely impact smallholder farmers, often resulting in crop failure, food insecurity, and reduced household income. The government's Affordable Input Programme (AIP) is a vital initiative providing subsidized inputs to farmers, thereby enhancing agricultural productivity and food security. Recognizing the need for a comprehensive risk management strategy, the Government of Malawi seeks to integrate agriculture insurance within the AIP framework. This program, termed the Agriculture Risk Resilience Insurance Access Program (ARRIAP), aims to protect farmers against climate risks, bolster resilience, and enhance food security. This executive summary outlines the key findings and recommendations from the feasibility study, which examines insurance models, challenges, and the potential for sustainable scaling.

Malawi, with a population of about 22 million, is predominantly rural, with 80% residing in countryside areas where agriculture is central to income and food security. The agriculture sector is the backbone of the Malawian economy, contributing nearly 30% to the GDP and employing over 90% of the population across various farming activities. Maize is the primary staple, widely cultivated by most households. Other essential crops include rice, beans, cassava, and groundnuts, while cash crops such as cotton, tobacco, coffee, and tea also play a significant role, contributing to export revenues and supporting Malawi's economic stability and rural livelihoods.

Farmers in Malawi face significant vulnerability to food security crises, driven by natural disasters and extreme weather events. These events, such as prolonged dry spells, floods, and intense rainstorms, disrupt agricultural production and deepen the fragility of food systems. Cyclone Freddy, occurring between 12th – 14th March, 2023, was one of the most devastating events in recent history, emblematic of an alarming rise in climate-related risks affecting Malawi. The cyclone unleashed more rainfall in three days than some areas receive annually, triggering widespread floods and landslides. According to the Post Disaster Needs Assessment, Cyclone Freddy affected over 2.5 million people and resulted in more than 1,400 deaths, a grim reminder of Malawi's susceptibility to climate extremes.

These frequent disasters place immense strain on Malawi's agriculture sector, the backbone of its economy and the primary source of food and income for its rural population. Maize, the country's staple crop, along with others like rice, beans, cassava, and groundnuts, are routinely affected by these weather events, causing unpredictable crop yields and threatening food availability at a national level. The agriculture-dependent communities are pushed closer to food insecurity with each climate shock, disrupting their ability to maintain consistent production and increasing reliance on external food aid.

Poverty in Malawi is widespread and persistent, with more than half of the population living below the poverty line. The impact of climate shocks is exacerbated by this socioeconomic vulnerability, as families who escape poverty often fall back into it after severe climate events. This cycle of poverty and recovery underscores the fragility of Malawi's rural livelihoods. At least 5.4 million Malawians experience chronic food and nutrition insecurity, a reflection of the country's challenges in building resilient food systems. With high poverty rates, Malawi's communities face limited resources to buffer against these shocks, increasing the risk of long-term malnutrition, particularly among vulnerable groups like children and the elderly, and underscoring the urgent need for sustainable interventions in food and agricultural resilience.

In response to Malawi's chronic food and nutrition insecurity and the recurring climate shocks devastating its agriculture sector, the Government of Malawi introduced the Affordable Inputs Programme (AIP) in the 2020/21 season, replacing the former Farm Input Subsidy Program (FISP). This strategic shift aimed to make agricultural inputs, such as seeds and fertilizers, more accessible to smallholder farmers, helping them sustain crop production despite economic and environmental challenges. By providing subsidies on essential inputs, AIP aims to increase food production, particularly of maize, the country's staple crop, which forms the dietary foundation for most households. The AIP program is particularly crucial in the context of increasing climate variability, which threatens Malawi's predominantly rural population that heavily depends on agriculture. Furthermore, by stabilizing agricultural productivity, AIP aims to reduce Malawi's dependency on food imports and international aid. The program's success could significantly improve the country's resilience to food crises and provide a foundation for sustainable agricultural growth, crucial to alleviating poverty and ensuring food security across Malawi's vulnerable communities.

Objective of the Programme - As per the Implementation Guidelines (2024 – 2025)
To increase smallholder farmer's access to improved agricultural farm inputs which will in turn lead to increased agricultural (i.e. cereal crop and goat) production, and increased household income through sales of surplus production.

Based on budget provision in the 2024-2025 season and the available carryover fertilizer stocks, the Ministry is of the view that it will target about 1,054,945 million productive farmers in the country of which 1,048,445 will be targeted for crop production and 6,500 for goat production.

Access to credit in Malawi is challenging for many small-scale farmers who lack collateral. Given agriculture's critical role in the economy and its climate vulnerability, the Government of Malawi, through the Ministry of Agriculture and with the support from InsuResilience Solutions Fund commissioned K.M. Dastur & Company Limited and Companion Insurance Group to conduct a feasibility study. This study explores the potential for bundling Agriculture Insurance with the Affordable Inputs Programme (AIP), aiming to protect farmers from risks and improve financial resilience within Malawi's agricultural sector.

The key objective is to establish an Agriculture Risk Resilience Insurance Access Program, embedding insurance within Malawi's Affordable Inputs Programme (AIP) to provide farmers with essential financial protection against significant agricultural losses. This program targets critical insurable risks, including disease outbreaks, unpredictable rainfall, and other natural disasters, directly affecting the identified value chains. By integrating insurance with AIP, the initiative aims to enhance farmers' resilience, fostering a more stable and sustainable agricultural sector. Through this comprehensive coverage approach, the program aspires to mitigate key agricultural risks, safeguard farmer livelihoods, and create a foundation for long-term agricultural security and growth in Malawi.

The feasibility study aimed to assess the viability of integrating Agriculture Insurance with Malawi's Affordable Inputs Programme (AIP). The study was conducted in three phases

Desk study and consultations with key stakeholders,
Focused Group Discussions; field visits and dialogues with individual farmers,
Collection of relevant data related to selected crops through a survey approach

Farmers in Malawi face a multitude of risks and challenges throughout the agricultural production cycle. Key issues include drought, rainfall deficits, pest infestations, disease outbreaks, excessive rainfall, storms, and hail, as well as increasingly erratic weather patterns. This analysis stems from consultations with farmer-based organizations, farmer groups, and a thorough desk review of secondary research. Additionally, farmers grapple with adverse price fluctuations, limited access to quality inputs, and challenges in securing the right type of labor. Addressing these complex challenges requires a robust, multi-layered risk management program for the agricultural sector, underpinned by continuous policy dialogue and progressive strategies.

A comprehensive insurance program, embedded within a Public-Private Partnership (PPP) model, could play a pivotal role in mitigating these risks. Insurance not only provides a direct risk transfer mechanism but also ensures farmers are cushioned against key production and market-related risks, enhancing their financial stability and resilience. Currently, several government-led initiatives aim to boost productivity and support resilience, such as fertilizer subsidies to improve soil fertility and seed subsidies for key crops. Specialized initiatives also focus on empowering women and youth in agriculture, creating opportunities for economic engagement and skills development within these groups.

Despite these valuable programs, no direct risk transfer mechanism currently exists at national level to protect farmers from the specific production and market risks they face. Integrating insurance into existing government initiatives offers a practical pathway to strengthen agricultural risk management. With insurance embedded in these programs, farmers would have enhanced protection against unpredictable losses, thereby reducing vulnerability and fostering a more resilient agricultural sector. This integration would ultimately contribute to food security and economic stability in Malawi's rural communities.

This demand-side study delves into the agricultural landscape of Malawi, focusing specifically on small-scale farmers across diverse regions, including the South (Blantyre), East (Machinga), Central (Lilongwe, Salima, Kasungu), and Northern (Karonga). It investigates the demand and potential framework for implementing an Agricultural Insurance Scheme, with a special emphasis on its integration with the Input Subsidy Program (i.e., AIP). This analysis sheds light on the challenges faced by these farmers, their readiness and inclination toward insurance, and preferred modes of participation and payment. The targeted Small-scale farmers from these regions of Malawi cultivate an array of crops, including maize, rice, millets, beans, sorghum, and more. Majority of farmers in these areas are beneficiaries of Affordable Inputs Programme (AIP).

Challenges Faced by Small-Scale Farmers Across Regions:
High Vulnerability and Low Resilience to Climate Risks - Farmers in Malawi encounter numerous obstacles impacting crop yield and overall productivity, often due to adverse weather patterns, pest infestations, and crop-specific vulnerabilities. Regional variations in these challenges highlight the need for a tailored approach to agricultural insurance.
South (Blantyre): Erratic Rainfall: Farmers report significant disruptions in crop cycles, with erratic rainfall affecting crops like maize, peas, and groundnuts.
Pest Infestation: Persistent pest issues add to the risks, increasing the demand for effective insurance solutions.

East (Machinga): Weather and Pest Challenges: The region faces similar issues with pests and weather unpredictability, particularly impacting rice, cassava, and maize.
Crop-Specific Risks: Farmers cultivating rice are particularly vulnerable due to region-specific pest attacks and inconsistent rainfall patterns.
Central Region (Lilongwe, Salima, Kasungu): Seasonal Rainfall Disruptions: Farmers often experience mid-season dry spells, affecting maize and sorghum crops.
Vulnerability to Floods: In Salima and Lilongwe, occasional floods increase the susceptibility of beans and maize to waterlogging and crop loss.
Northern Region (Karonga): Pests and Adverse Weather Conditions: Farmers cite persistent challenges with pest control and unpredictable weather patterns.
Crop Susceptibility: Maize and rice are particularly affected, with recurring losses that impact food security and income.

Farmer Preparedness and Coping Mechanisms: Existing social safety nets provide limited support, often insufficient to fully mitigate the impacts of adverse weather events. Farmers across Malawi's regions display varying levels of preparedness and resilience in coping with agricultural losses. While some farmers are better equipped to manage immediate challenges, others prioritize long-term strategies for the next planting season.
Karonga (Northern Region): Belief in Resilience: Despite limited strategies, there is a strong belief in agricultural resilience among farmers.
Local Knowledge Gaps: Lack of specific approaches for mitigating agricultural losses limits the effectiveness of resilience strategies.
Domasi (Eastern Region): Community Preparedness: Farmers display a strong communal approach to preparedness, though knowledge limitations reduce effectiveness.

Blantyre (Southern Region): Holistic Agricultural Approach: Farmers here view agriculture as a continuous cycle, focusing on renewing efforts for the following season rather than immediate risk mitigation.

Interest in Agricultural Insurance
Across all surveyed regions, there is significant interest in participating in an agricultural insurance scheme. Farmers recognize the value of insurance in protecting against financial risks and promoting sustainable practices.
Community Awareness and Interest: Seminars and Educational Initiatives: Farmers express the need for targeted educational programs to understand insurance benefits fully.
Focus on Community-Level Understanding: Many farmers advocate for community-wide educational efforts to promote insurance uptake.
Concerns and Expectations: Agricultural insurance remains underutilized in Malawi, primarily due to limited awareness, high costs, and complex access procedures. Most smallholder farmers are unaware of the availability, benefits, and mechanisms of agriculture insurance products.
Pricing and Coverage Scope: Farmers are concerned about the cost of insurance premiums and the extent of coverage.
Claims and Compensation Processes: Transparency and ease in the claims process are highly valued, with farmers emphasizing the need for prompt compensation.

Preferred Approaches for Purchasing Crop Insurance
Farmers have clear preferences regarding how they would like agricultural insurance to be managed, with a majority favoring farmer cooperative as the primary means for purchasing insurance.
Cooperative-Led Insurance Management: Regional Familiarity with Cooperatives: Many farmers in the Extension Planning Areas (EPAs) belong to cooperatives, which they see as trusted platforms for managing agricultural insurance.
Integration with Irrigation Schemes: Farmers in areas like Domasi, part of irrigation schemes, are inclined toward cooperatives due to established associations within these networks.
Public-Private Partnerships (PPP) Involvement: Role of PPPs: Farmers support collaboration between the government, cooperatives, and insurance providers to create a robust, community-focused insurance system.
Trust in Government-Linked Initiatives: The integration of cooperatives within PPPs is viewed to enhance trust and accessibility to insurance services.

Payment Methods and Governance Preferences
Payment flexibility and appropriate governance structures are crucial considerations for small-scale farmers in Malawi, reflecting their unique financial circumstances and community-based approach to risk management.
Flexible Payment Options: Preference for Mobile Money Payments: Farmers widely favor mobile money as a convenient, accessible payment method that aligns with their cash flow patterns.

Group Payment Structures: There is a strong preference for group-based payment systems, which would facilitate collective risk-sharing and ease of access to insurance.
Tailored Premium Pricing: Variable Pricing Based on Land Size or Crop Type: Farmers advocate pricing structures that consider individual land sizes or crop types, ensuring affordability and relevance to their unique farming operations.

Governance and Trust Mechanisms: Community-Driven Governance: Farmers express a preference for local governance structures within cooperatives, as these are perceived to be more transparent and accountable.

Emphasis on Trust-Building Measures: Clear communication, transparency in premium collection, and an efficient claims process are highlighted as essential for building trust and ensuring consistent participation.

This feasibility study highlights the complex risk environment faced by small-scale farmers in Malawi and the significant interest in agricultural insurance to support resilience. By aligning these insights with the Input Subsidy Program (i.e., AIP), an Agricultural Insurance Scheme can significantly contribute to Malawi’s agricultural resilience, protecting small-scale farmers from unpredictable risks and supporting sustainable farming practices across regions.

Malawi's agricultural calendar comprises two key seasons: the main rainy growing season from November to May, vital for cultivating staple crops like maize and rice, and the dry, or dimba, season from June to October, suitable for short-cycle crops like vegetables. The rainy season’s productivity is crucial to food security, while the dimba season provides an opportunity for supplementary income and dietary variety. However, the dry period, June to September, is marked by limited rainfall, which restricts crop production.

Malawi’s diverse topography and regional climate variations create unique challenges for farmers who rely heavily on these seasonal patterns for planning their agricultural activities. Recognizing this, the Agriculture Risk Resilience Insurance Access Program is designed to consider these seasonal nuances in its crop insurance model. For regions where historical yield data for crops like maize, sorghum, rice, and millet is available, an Area Yield Index Insurance program is proposed, offering tailored protection against regional yield fluctuations and enhancing farmers’ resilience against adverse weather impacts.

The integration of crop insurance with Malawi's Affordable Inputs Programme (AIP) presents a compelling opportunity to boost resilience among smallholder farmers while aligning with the government’s agricultural policy goals. AIP, designed to provide affordable access to essential inputs, could effectively incorporate crop insurance to mitigate the risks farmers face, such as adverse weather and crop loss, fostering a more sustainable agricultural sector. This bundling approach has notable potential benefits and several challenges that require careful consideration.

Improved Farmer Resilience: One of the most significant advantages of bundling crop insurance with AIP is the immediate improvement in resilience for smallholder farmers. With insurance coverage embedded within the subsidized inputs, farmers gain a financial safety net that can help them withstand losses from adverse weather conditions and other risks. This financial protection is crucial, as most smallholders operate on tight margins and lack the resources to recover from crop failures or extreme weather events. By enabling farmers to recover swiftly after a loss, crop insurance supports continuity in agricultural production, promoting long-term resilience and food security. In times of crisis, insurance coverage can also reduce the need for farmers to take on debt or sell productive assets, preserving their economic stability.

Increased Uptake of Crop Insurance: Linking crop insurance to AIP could significantly increase insurance uptake among smallholder farmers. AIP reaches millions of farmers across Malawi, and bundling insurance with this program can make insurance both accessible and affordable, especially for farmers who might not consider insurance independently. By embedding the insurance cost within the subsidized package, smallholders benefit from a bundled safety net without needing to allocate additional funds for coverage. This approach reduces barriers to entry, which can lead to higher participation rates and a more comprehensive risk-sharing pool, further enhancing the viability and affordability of the insurance program.

Cost Implications and Funding Needs: However, bundling crop insurance with AIP introduces substantial cost implications, including the need for premium subsidies and expanded administrative resources to manage insurance operations. Ensuring the program's sustainability requires long-term funding sources to cover both premium subsidies and operational costs. Without consistent financial backing, there is a risk that the program may face interruptions, limiting its effectiveness. Innovative funding mechanisms, including contributions from international donors or public-private partnerships, would be crucial in providing sustainable financial support, making the bundled insurance program a lasting safety net for farmers.

Farmer Awareness and Education: Another critical challenge is the generally low awareness among smallholders about the benefits of crop insurance. Many farmers are unfamiliar with insurance as a tool for risk management, which means that extensive outreach, education, and training would be essential to foster understanding and trust in the program. Educational initiatives, such as community workshops, demonstration projects, and farmer training sessions, can help shift perceptions, enabling farmers to see insurance as a reliable solution for managing agricultural risks. This awareness-building effort is vital for long-term success, as it will encourage farmers buy-in and sustained engagement with the insurance program.

Partnership with the Private Sector: Integrating insurance within AIP would require robust collaboration with the private sector, specifically insurers capable of designing affordable and relevant insurance products. To ensure that the products meet the unique needs of smallholder farmers, insurers would need to work closely with the government and farmer organizations to tailor coverage and claims processes. Public-private partnerships (PPPs) could play a critical role in supporting product design and distribution, as well as in risk-sharing, which is particularly important in managing widespread, systemic risks such as drought. These partnerships also contribute to the broader growth of the insurance sector in Malawi, bringing technical expertise and expanding financial inclusion.

Alignment with Government Policy Goals: Bundling crop insurance with AIP aligns well with Malawi's broader agricultural and economic policy goals, which prioritize a resilient farming sector capable of withstanding climate variability. The government aims to stabilize agricultural productivity and improve rural livelihoods despite climate challenges. Integrating insurance into AIP would support these goals, offering farmers not only the means to produce but also the protection to persevere through potential losses. The program could thus serve as a model for climate-resilient agriculture, showcasing a balanced approach to productivity and protection.

Capacity Constraints of Current Insurance Providers: Local insurance providers exhibit limited capacity to manage agricultural insurance portfolios, particularly for products requiring specific data, actuarial, and distribution expertise. Without adequate technical support, it is challenging to design affordable, efficient, and transparent agriculture insurance products. A Public-Private Partnership (PPP) approach could bridge this gap, supporting insurers with data and technical assistance to manage climate risk.

Product Structure and Design: The proposed Area Yield Index Insurance (AYII) product is designed to provide comprehensive risk coverage for the identified crops maize and rice under the AIP across Malawi's eight Agricultural Development Divisions (ADDs), addressing the substantial yield variability observed between 2012 and 2023. Given the frequent and severe impact of systemic risks - such as droughts, floods, pests, and diseases - on crop yields, this insurance solution offers a targeted safety net for farmers when their harvests fall short of the expected yield levels due to these insurable events.

The AYII product operates on a yield index basis, using historical and seasonal yield data to establish a yield threshold or "trigger yield" for each ADD. This threshold, calculated from multi-year yield averages, serves as the benchmark; payouts are triggered whenever the actual yield in a given season falls below this level. Since the payouts are linked to regional yield data rather than individual farm performance, the product ensures simplified administration and faster claim settlements, making it highly scalable and accessible.

Programme	Malawi Scheme
Crop(s) to be insured	Maize; Rice
Insurer	TBA
Locations of farms	Karonga, Mzuzu, Kasungu, Salima, Lilongwe, Machinga, Blantyre & Shire Valley
Policy Period	Wet season
Proposed planting windows	TBA
Claims protocol	Crop cuts conducted at the end of the season
Farmer requirements	Good agronomical practices
Reference yield	(See table below)
Gross Indicative Premium Rate (exclusive of crop cutting costs)	Maize – 5.05% Rice – 6.20%
Proposed Yield Guarantee	70%
Deductible	0%
Risks insured	Excessive Rainfall, Hail damage, Frost damage, Fire, Windstorm, flooding, Drought and Uncontrollable Pests and Diseases

Under AYII, farmers are compensated based on the extent of the yield shortfall below the trigger threshold, with payouts increasing proportionately to the degree of loss. This design provides substantial protection against income loss, enabling farmers to maintain their financial stability and continue investing in agricultural inputs and practices even after adverse events. By providing indemnity for systemic risks beyond farmers' control, AYII enhances their resilience and supports sustained agricultural productivity.

Integrating AYII into Malawi's existing agricultural programs, such as the Affordable Inputs Programme (AIP), can further incentivize uptake, making crop insurance an accessible and integral part of farmers' risk management strategies. The product's simplicity and the reliability of index-based payouts make AYII a scalable and sustainable solution, fostering agricultural resilience and contributing to long-term food security in Malawi.

Institutional Set-up: Bundling crop insurance with Malawi's Affordable Inputs Programme (AIP) requires a well-coordinated institutional framework to ensure effective delivery to smallholder farmers. This setup relies on a public-private partnership (PPP) model that integrates government, private sector, and development partners to strengthen agricultural production, with the Ministry of Agriculture and Food Security as the central coordinating body. The Ministry will lead the development of policies, set regulatory frameworks, and align insurance integration with national agricultural goals, while working closely with government agencies, private insurers, and international partners. Regulatory oversight will be managed by the Reserve Bank of

Malawi, which will review and approve crop insurance products to ensure they are affordable, transparent, and tailored to the needs of Malawian farmers. This includes regulating premium structures, protecting farmers' rights, and addressing disputes related to insurance claims, ensuring both fairness and accessibility. Selected private and public insurance companies will develop and deliver products, such as Area Yield Index Insurance (AYII), collaborating with agro-input suppliers to embed insurance in input distribution channels. The insurance companies will manage claims, provide customer service, and offer education to increase farmers' awareness of insurance coverage. A Steering Committee, comprising representatives from the Ministries of Agriculture and Finance, insurance companies, donor agencies, agro-input suppliers, and farmer organizations, will oversee program integration, design operational guidelines, monitor and evaluate the program, and manage resource flows between government subsidies, insurance companies, and farmers to maintain transparency and accountability.

Farmer cooperatives and associations will play a critical role by organizing group insurance, pooling risks, facilitating farmer training, and acting as liaisons between farmers, government, and insurance providers to resolve grievances. These cooperatives enhance the program's reach and efficiency by consolidating farmer networks and making risk-sharing more practical. Development partners and donors, including international organizations such as the World Food Programme, will provide financial support through premium subsidies and fund initial pilots to facilitate broad adoption. In addition to financial contributions, these partners will help with capacity building, supporting data infrastructure development to monitor crops and assess yields using tools like satellite data, which is crucial for the effective functioning of AYII. Input suppliers and distributors will be vital channels for delivering bundled crop insurance with the AIP, integrating insurance information and transparency at the point of sale while tracking and reporting distribution to ensure all inputs covered by insurance reach the intended beneficiaries.

Government extension services and NGOs will conduct farmer education, training farmers on insurance, their rights, and claims processes, thereby enhancing the insurance program's accessibility and understanding among smallholder farmers. This on-the-ground support will help farmers navigate the claims process and provide ongoing feedback to improve the program's responsiveness to farmer needs. Key pillars of the PPP model will include co-financing premiums, supporting catastrophic losses, establishing standardized terms and conditions, and implementing capacity-building initiatives for insurance literacy. Policies that promote transparency, fair claims settlement, and long-term program sustainability will further strengthen Malawi's agricultural sector, providing smallholder farmers with a risk management tool that fosters resilience, productivity, and market stability. This model exemplifies the power of public-private collaboration, merging government support, private sector efficiency, and donor assistance to create a comprehensive solution for agricultural risk management in Malawi.

Key Recommendations

Develop an Integrated Agriculture Insurance Package for AIP Beneficiaries: Integrate a compulsory, bundled crop insurance package within the AIP. This package should cover the primary crops supported by the AIP and provide protection against droughts, floods, and other climate-related risks. The insurance product should be index-based, leveraging satellite, yield and rainfall data to trigger payouts automatically in the event of weather/ yield anomalies. This model reduces transaction costs and ensures timely compensation to affected farmers.

Adopt a Subsidized Insurance Model with Government Support: To make insurance affordable for smallholder farmers, the government should subsidize a portion of the premium, as done with inputs under the AIP. The study recommends that premiums be set between 5-7% of the input cost, with 50-70% subsidized by the government, depending on the farmer's vulnerability level and region. The subsidy model should be designed to decrease gradually, encouraging market sustainability in the long term.

Build a Comprehensive Data Infrastructure for Insurance: Address the data gaps by establishing a centralized data infrastructure that compiles and shares climate, yield, and soil data across Malawi. Investment in automated weather stations and partnerships with satellite data providers will enhance data accuracy for index-based insurance models. Moreover, data-sharing arrangements between government agencies and insurance providers should be formalized to support effective risk assessment and pricing.

Strengthen Insurance Literacy and Farmer Outreach Programs: Raise awareness among farmers about the benefits, functionality, and claim procedures of agricultural insurance. The government, in partnership with insurance providers and NGOs, should roll out targeted literacy campaigns that use community engagement, demonstration sites, and farmer field schools. These outreach programs will empower farmers to make informed decisions and actively participate in the insurance process.

Implement a PPP Model for Sustainable Insurance Delivery: A Public-Private Partnership (PPP) approach should be adopted to combine the strengths of the government and private insurers in delivering insurance services. The government can provide data infrastructure, subsidies, and regulatory support, while private insurers focus on product development, risk assessment, and distribution. Establishing an Agriculture Insurance Fund (AIF) as part of this PPP framework would help sustain the subsidy model and cover high-risk years.

Establish a Risk Pool and Reinsurance Framework: To mitigate risk exposure, a pooled risk-sharing arrangement should be set up, allowing insurance providers to share the liability associated with extreme weather events. A national risk pool, backed by international reinsurance, would stabilize premium costs, make payouts more predictable, and reduce the financial strain on any single insurer. Collaboration with global reinsurance providers will strengthen the program’s resilience to large-scale losses and attract additional investment.

Enhance Policy and Regulatory Support for Agriculture Insurance: Effective policy and regulatory measures are essential for successful program implementation. The Ministry of Agriculture, along with the Insurance Regulatory Authority of Malawi, should establish a conducive regulatory framework, including clear guidelines on premium subsidies, data standards, product approval, and claims management. Regulatory support will facilitate program transparency, accountability, and consumer protection.

Pilot Program for Scaling and Refinement: Initiate a pilot program in high-risk districts where agriculture insurance could have the most significant impact. This pilot phase will enable stakeholders to refine product design, assess challenges, and test distribution models in a controlled environment. Insights gained from the pilot will inform the national roll-out and allow for adjustments that enhance program effectiveness and farmer satisfaction.

Digitalize Insurance Processes for Efficiency: Invest in digital platforms to streamline insurance administration, enrollment, and claims processing. A digital system will improve transparency, reduce administrative costs, and make insurance accessible to more remote regions. Additionally, integrating mobile platforms as suggested earlier for premium payments and payout distribution will facilitate farmer participation and increase program efficiency.

Continuous Monitoring, Evaluation, and Adaptation: Establish a robust monitoring and evaluation (M&E) framework to track program performance and ensure continuous improvement. Key metrics should include farmer participation, claim frequency, payout adequacy, and impact on resilience and income stability. Annual assessments should provide feedback to policymakers and insurance providers, facilitating adaptive changes to respond to evolving challenges and farmer needs.

In conclusion, the Agriculture Risk Resilience Insurance Access Program provides a unique opportunity to strengthen Malawi's agricultural sector by building resilience against climate-related risks. Integrating agricultural insurance within the AIP will help protect smallholder farmers, enhance productivity, and promote food security. This feasibility study's recommendations offer a strategic roadmap for implementing a comprehensive, inclusive, and sustainable agriculture insurance model in Malawi. Through targeted interventions in data infrastructure, insurance literacy, subsidy provision, and public-private partnerships, the program has the potential to transform agricultural risk management in Malawi, fostering a resilient and thriving rural economy.

2. INTRODUCTION

Since Malawi achieved independence in 1964, agriculture has remained the mainstay of the nation's economy. According to the 2015 Annual Economic Report, agriculture accounts for 30 percent of Gross Domestic Product (GDP) and generates over 80 percent of national export earnings. The 2013 Malawi Labour Force Survey report indicates that agriculture employs 64.1 percent of the country's workforce. Agriculture also contributes significantly to national and household food security and nutrition. The Government of Malawi recognises the importance of agriculture in driving economic growth and its contribution to economic and human development of the country, as highlighted in the MGDS II. To this end, the government for the past decade has continually allocated more than 10 percent of the annual national budget to agriculture. The Malawi National Agriculture Policy (2016) cites that growth in Malawi's agriculture has been volatile over the years, suggesting structural weaknesses and a lack of resilience in the sector. With 85% of the population dependent on agriculture, a huge loss in this sector affects the nation at large. Major losses usually arise from flooding and drought leaving a large number of the population facing hunger and a large number of farmers with unimaginable losses. The food crises induced by several factors including flooding and erratic rainfall in 1992, 1994, 2002, 2004, and 2015 demonstrate the particular vulnerability of the sector to weather-related shocks. Usually, farmers experience several shocks due to agricultural produce losses, hence considering agricultural insurance remain one of the crucial strategies to assist farmers in times of losses.

The demand side feasibility study was commissioned to get first-hand information from a diversified sample of smallholder farmers on the impact of natural disasters and how they cope with the ensuing losses. The feasibility study also focused on awareness of insurance and preparedness of farmers to adopt insurance if crop insurance bundled with AIP were to be introduced.

3. SCOPE AND OBJECTIVES OF THE FEASIBILITY STUDY

The study aimed to find out if farmers were aware of agriculture insurance and their interest in the same and their financial capacity to pay premiums towards the scheme.
The study also aimed to specifically inquire into the attitude of farmers towards crop insurance and the best way the scheme would operate to ensure that the farmers are satisfied. Ways of how premiums would be paid and claims would be handled were two of the major items that were thoroughly discussed. In brief, the terms of references for the feasibility assessment were as follows:

- Profiling of farmers and end beneficiaries (AIP) and other value chain actors
- Research on the needs for types of agro-insurance (Climate risk insurance products)
- Income characteristics of the target groups, and value chain actors and links to markets
- Analysis of the attitudes of the consumer towards agro insurance including willingness and ability to pay (cost-benefit analysis)
- Evaluation of the extent to which existing insurance products meet the needs of the consumer

4. IMPORTANCE OF THIS FEASIBILITY STUDY

Enhancing Agricultural Resilience: The study's primary importance lies in its potential to enhance the resilience of Malawian agriculture. By identifying and understanding the risks and challenges faced by smallholder farmers, it can lead to the development of agricultural insurance schemes that provide a safety net against these risks. This, in turn, can help protect farmers' livelihoods and prevent them from falling deeper into poverty in the face of disasters. This is equally important to farmers who are beneficiaries of Malawi Government's major agricultural subsidy programme, the Agricultural Input Subsidy Program (AIP).

- Economic Stability: Agriculture plays a pivotal role in Malawi's economy, contributing significantly to the GDP and providing employment to a large portion of the population. The study's findings and proposals if implemented, can contribute to economic stability by reducing the financial shocks experienced by farmers due to crop losses. This stability can have a positive ripple effect on the economy especially where farmers are able to adopt adaptive technologies and systems.

- Food Security: The study focusses on crops such as maize, beans, and sorghum, which are staples in Malawi, and are crucial for food security. When farmers experience crop losses, it can lead to food shortages and increased food prices in the country depending on the intensity. Agricultural insurance can help ensure a consistent food supply and stabilize food prices.

- Climate Change Adaptation: Climate change poses a significant threat to agriculture in Malawi. By addressing the impacts of climate change on farming practices, the study can contribute to proposals for climate change adaptation strategies. Insurance can act as a financial tool to help farmers adapt to changing weather patterns and mitigate the effects of climate-related risks.

- Financial Inclusion: Smallholder farmers, who form the backbone of Malawian agriculture, are often financially excluded and lack access to formal financial services. The study can promote financial inclusion by integrating insurance products into their risk management strategies. This inclusion can empower farmers to invest in their farms and improve their agricultural practices.

- Private Sector Development: The study's exploration of public-private partnerships in the form of agricultural insurance schemes can foster the development of the private sector. Insurance companies, banks, and microfinance institutions can play a significant role in these initiatives, leading to the growth of the financial sector and related industries.

- Policy Alignment: The study's findings can align with government policies and strategies, such as the Financial Sector Development Master Plan (FSDMP) and the Agricultural Sector Development Programme (ASDP II). By addressing the catastrophic nature of agricultural risks, the study can provide insights to support policy development and implementation.

- Reducing the Burden on Government: Currently, the government often provides ad hoc support to farmers after large production shocks. By shifting towards a planned and budgeted agricultural insurance approach, the study can help reduce the financial and operational burden on the government and create a more sustainable model for supporting farmers. The efficiencies brought about by the private sector are usually higher than the public sector's.

- Gender and Youth Inclusion: The study's consideration of diverse groups, including women, youth, and vulnerable populations, ensures that insurance solutions are tailored to their specific needs. This inclusivity promotes gender equality and youth engagement in agriculture.

- Long-Term Sustainability: By assessing the feasibility and sustainability of insurance schemes, the study can pave the way for long-term risk management solutions that go beyond the project's duration. This sustainability is crucial for the continuous protection of farmers and the growth of the agricultural sector.

In summary, the study's importance lies in its potential to transform Malawian agriculture by mitigating risks, fostering economic stability, and promoting resilience in the face of climate change and other challenges. It aligns with national policies, supports financial inclusion, and empowers a diverse range of stakeholders, ultimately contributing to the overall well-being of the country.

5. APPROACH AND METHODOLOGY OF THE STUDY

5.1. Approach

The survey conducted a comprehensive exploration of agricultural challenges faced by small-scale farmers in Blantyre, Machinga, Lilongwe, Kasungu, Salima and Karonga. Employing a mixed-methods approach though largely qualitative, the study seamlessly integrated qualitative methodologies, including Focus Group Discussions (FGDs) and In-Depth Interviews (IDIs), with quantitative techniques such as face-to-face surveys. This combination aimed to provide a holistic understanding of the intricate dynamics within the farming community, offering both depth of insight and breadth of data.

Survey Areas: The survey was regional and was conducted in regions in which farmers grow Maize, Rice, Ground nuts, Soya, Peas and Cassava. The survey was conducted in six (6) districts that included Blantyre, Machinga, Lilongwe, Kasungu, Salima and Karonga.

5.2. Qualitative Approach

A qualitative and quantitative approach was strategically deployed to gain a comprehensive understanding of the agricultural and climate risk insurance landscape in Malawi. Qualitative research methods, such as Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs), were harnessed to delve deeply into the experiences, perspectives, and challenges faced by a diverse group of farmers across various regions of the country. The qualitative approach aimed to unearth nuanced insights and to capture the unique contexts of different agricultural activities in Malawi. While the findings may not be universally generalizable, they provide rich embroidery of information that informs the development of agricultural insurance schemes tailored to the specific needs and circumstances of Malawian farmers. This qualitative research approach serves as the foundation for understanding the demand-side dynamics and complexities associated with agricultural insurance in Malawi. It enables us to explore the intricacies of smallholder farming, climate risks, and the potential for insurance solutions that can bolster the resilience of the agricultural sector in the face of evolving challenges.

5.3. FGD respondent selection

During this feasibility study, the selection of respondents was carried out through a purposive sampling method within the designated sample areas. To ensure that the study encompassed a diverse representation of the farming community, specific screener variables were employed during the respondent selection process. These criteria and their corresponding categories were as follows:

Table 1 Respondent Selection Criteria

Criteria	Categories
Affordable Inputs Program (AIP)	- Those affording the inputs within 2 ha or less (≤2) - Those affording more than 2 ha
Landholding size (ha)	- Those owning 2 ha or less (≤2) - Those owning more than 2 ha
Land access	Those with land enough to cater for the needs of the family. Those who do not own farmland or own little of it, which does not suffice family needs. Those with excess farmland
Farming system	Those who deal with crops only.
Market orientation	Those producing for subsistence level. Those producing enough crops to meet family needs and excess for market. Those producing mostly for commercial purposes (consume less than 50 % of what they produce).
Source of labour	Mostly family members only. Those using family members and some hired labour. Those using hired labour.

Management	Those carrying out all decisions regarding farm activities. Those where operational decisions influenced by external partners.
Farm family leadership	Male-headed farm families. Female-headed farm families.
Land ownership rights	Those with title deed. Those whose ownership is by customary laws. Inherited land ownership.
Primary land preparation tools	Those using traditional tools e.g., hand hoes. Those using animal-drawn implements. Those using farm machinery.
Income streams	Those depending only on on-farm activities. Those depending on both on-farm and off-farm activities.

5.4. Respondent Recruitment

Field recruiters, in collaboration with Village leaders, District Agricultural Development Officers and Agricultural Extension Planning Officers, carried out the recruitment of respondents. During the recruitment process, the screening criteria mentioned in table 1 was considered. A final assessment of respondents' suitability was conducted by the Quality Control team at the FGD locations before their participation in the FGDs was confirmed.

5.5. Focus Group Discussions (FGDs):

A total of twelve (12) FGDs were conducted, with each group comprising a minimum of 15 participants, and in total, there were 165 farmers who actively participated in these discussions. These farmers represented a diverse range of agricultural activities, primarily focusing on rice, maize, soya beans, and groundnuts. Additionally, it's worth noting that there were separate women's groups for rice conducted in Machinga and a women's group for maize. The remaining groups were mixed in gender but specific to a particular crop.

Table 2: Focus Group Discussion (FGD) respondents

FGD Locations	Important Crops	No. of FGDs	FGD Composition	F2F Quantitative Interviews
Blantyre	Maize Groundnuts	2	Maize – 15 Groundnuts – 10	25
Machinga	Maize Soyabeans Rice	2	Maize – 10 Soyabeans – 10 Rice – 10	30
Lilongwe	Maize Groundnuts	2	Maize – 15 Groundnuts – 10	25
Kasungu	Maize Soyabeans	2	Maize – 20 Soyabeans – 10	30
Salima	Rice Groundnuts	2	Rice – 15 Groundnuts – 15	30

Karonga	Rice Soyabeans	2	Maize – 15 Soyabeans – 10	25
Total		**12**		**165**

** Every FGD were composed by women and men from that location*

5.6. FGD Language and Recording

All Focus Group Discussions (FGDs) were recorded, and participants provided their consent for the recordings before they were included in the FGDs. These discussions were conducted in Chichewa for Blantyre, Kasungu and Salima, Yao for Machinga, and Tumbuka for Karonga. The transcripts from these discussions were translated into English for reporting purposes.

5.6.1.1. In-depth Interviews and Key Informant Interviews (KIIs) with Agricultural stakeholders

The research employed a combination of In-Depth Interviews (IDIs) and Key Informant Interviews (KIIs) to engage with key agricultural stakeholders. These stakeholders included District Agriculture Officers, Agricultural Extension Officers, Leaders of Farmer Groups, Cooperative Officers, and Ward Extension Officers. The selection of respondents for both IDIs and KIIs was purposive, considering their profound knowledge of farmer agriculture practices and associated climate risks in the specific regions they work.

5.6.1.2. Rationale for selection:

Expertise and experience:
Agriculture Extension Development Officers (AEDO): As leaders at the district level, these officers possess a comprehensive understanding of the broader agricultural landscape, policies, and challenges within their jurisdiction.
Agriculture Extension Officers: Operating at the ward level, these officers bring localized insights, having a close connection to the farming communities and understanding their specific needs.

Leaders of Farmer Groups: Individuals leading farmer groups play a pivotal role in community engagement and organization, making them valuable sources of information on grassroots challenges and strategies.

5.6.1.3. Institutional Insights:

Cooperative Officers: With a focus on cooperative farming, these officers provide insights into collective farming practices, challenges faced by farmer cooperatives, and potential avenues for improvement.

Agricultural Extension Officers: Responsible for extending agricultural knowledge at the ward level, these officers offer a unique perspective on the on-the-ground challenges faced by farmers and the effectiveness of extension services.

5.7. Quantitative Approach

In conjunction with qualitative methodologies, the survey conducted 165 quantitative face-to-face interviews to gather structured data from farmers within the survey areas. Employing a semi-structured tool, the interviews aimed to provide a systematic and comprehensive understanding of farmers' experiences, challenges, and perspectives related to agricultural practices, climate risks and agricultural insurance policies.

Sampling approach: The selection of respondents followed a meticulous screening process to identify household members actively engaged in agricultural activities. This ensured that the interviews captured insights from individuals directly involved in farming, contributing to the relevance and depth of the collected data.

Varied interview settings: Some farmers were interviewed at their households, allowing for an intimate exploration of their farming environment and practices. Additionally, others were invited to central locations where Focus Group Discussions were being conducted. This variation in settings allowed for a diverse range of perspectives, ensuring a holistic representation of the agricultural landscape in the survey areas.

Semi-Structured Tool: The interviews were conducted using a semi-structured tool, offering a balance between standardized questions and the flexibility to explore emerging themes. This approach facilitated the collection of quantitative data while allowing in-depth insights into farmers' experiences, coping mechanisms, perceptions of climate risks and perceptions about agricultural insurance.

6. AGRICULTURE RISKS, LOSSES AND CHALLENGES

Agriculture, being a cornerstone of livelihoods for most rural households in the surveyed regions, plays a pivotal role in shaping the economic landscapes. However, it is not immune to the challenges posed by various factors, leading to agricultural losses. This chapter delves into the complex dynamics of agriculture losses experienced by farmers in the surveyed regions. From weather-related uncertainty losses to unforeseen challenges, understanding the nuances of these losses is crucial for developing targeted solutions. The study aims to shed light on the intricacies of agricultural risks, their impact on local communities, and the potential role of insurance in mitigating such losses. Through comprehensive exploration, this study strives to contribute valuable insights that can inform strategies to bolster the resilience of farmers and foster sustainable agricultural practices.

6.1. Agricultural challenges across multiple regions – insights for insurance product development

Findings from FGDs and IDIs across Blantyre, Machinga, Lilongwe, Kasungu, Salima and Karonga, encompassing maize, rice, soya, and groundnuts farmers reveal a multifaceted agricultural landscape. Distinct challenges and opportunities surface, offering nuanced insights for the strategic development of tailored insurance products. Below are the common challenges and opportunities:

Challenge: Climate Vulnerability. Unpredictable rainfall patterns and mid-season droughts emerge as consistent challenges across Blantyre rural, Machinga and Salima.

Opportunity: The development of insurance products that comprehensively address climate-related risks, ensuring coverage for erratic rainfall and extreme weather events should be considered.

Challenge: Pest Management. There are persistent threats from pests like armyworms, Farmers of groundnuts cited rosette as the main disease that affect their crop. Maize farmers identified pests like Stalk borers (*Busseola fusca*), African Armyworms (*Spodotera exempla*), Seedling weevils (*Tanymecus spp*), which all occur between planting and harvesting. Farmers also cited post-harvest insects like Larger Grain Borer (LGB), Weevils and termites. This study though concentrated on the pests that farmers deal with during the period of plaiting to harvesting, as the agricultural insurance policy will only cover the crops during this period. Rice farmers mentioned insects like stem borers (*Chilo partelus, sesamia*), stalk eyed fly (*Diopsis spp*) and small rice grasshoppers (oxya spp). Diseases in rice were mentioned like Rice yellow mottle virus, Rice blast and brown leaf spot.

Opportunity: In light of this concern, insurance coverage may be designed to safeguard farmers against losses incurred due to pest infestations, providing financial security amid unpredictable occurrences.

> *"…for me its Armyworms (ntchemberezandonda) that affect my maize and buying pesticides is very expensive."* ***Farmer, Machinga***

Challenge: Soil Health and Fertility. Implicit concerns about soil fertility echo across all regions surveyed. Insurance schemes can integrate coverage for soil health management, promoting sustainable agricultural practices and enhancing long-term productivity.

Opportunity: Promoting sustainable soil management practices and integrating them into national agricultural programs like the Affordable Inputs Program (AIP)

Challenge: Market Access. Findings from FGDs reveal that market-related challenges and lower crop prices impact the economic viability of farming especially for farmers in Blantyre, Machinga and Kasungu. Farmers complained the proliferation of middlemen with unregulated weighing scales that rip-off farmers produce. Insurance products can incorporate market-related coverage, ensuring compensation during market fluctuations to stabilize income for farmers.

> *"Finding market is very difficult, you need to travel long distances to the city to sale the produce at a better price. This becomes expensive"* ***Farmer in Machinga***

> *"...market is a big problem. the government should help us get market for our Soya. Sometimes when you get a buyer, the prices are very low and not encouraging."* ***Farmer, Lilongwe***

Opportunity: Market access under crop insurance in Malawi involves integrating crop insurance with market linkage initiatives, which can improve farmers' financial stability and market access. Here are specific ways this could be achieved:

- Bundling Crop Insurance with Contract Farming where insurance work as a Tool for Market Price Stabilization
- Linking Insured Farmers to Buyers and Exporters;
- Increased Credit Access with Insurance;
- Government-Subsidized Insurance to Enhance Market Participation.

Challenge: Financial Constraints. Across all region's findings from FGDs and IDIs reveal that financial constraints, input scarcity, and poverty hinder the adoption of modern practices among farmers. Mitigating financial risks associated with input scarcity through insurance solutions, may help facilitate the adoption of modern techniques.

> *"Capital is the primary problem faced by farmers. Majority do not have capital and sometimes when they make a good sale during a harvest, they 'waste' the money. They are always tied up in a circle of poverty.* ***Agricultural Extension and Development Office.***

6.2. Knowledge about insurance

Many farmers that were utilized for the FGDs have heard of insurance. The results from the survey showed that 78% of the farmers were aware of several insurance packages. Only 22% narrated that they do not know any type of insurance. A huge cross section of farmers is aware of motor insurance and life insurance as these are the two most publicized by the insurance industry. However, when asked about crop insurance, many farmers admitted that they were not familiar with this product. This is mainly due to the insurance industry not having an appetite to sell crop insurance mainly due to the huge claims that normally arise on a regular basis. The only EPA where almost all farmers were aware of crop insurance was Lirangwe EPA in Blantyre where it was hugely publicized and sold by PULA in coordination with Foundation for Irrigation and Sustainable Development (FISD). This could be because these EPAs are close to urban centres, and they are able to access information related to insurance services in Malawi.

> *"I have ever heard about insurance packages like motor vehicle and life insurance."* ***Farmer in Lilongwe***

Although majority of the respondents have heard or are aware of several insurance policies available, only a few farmers have participated in them. During the FGDs, some farmers lamented that they have limited information about agricultural insurance policies available. However, if the farmers are sensitized about agricultural policies, they might be willing to participate in the said policies.

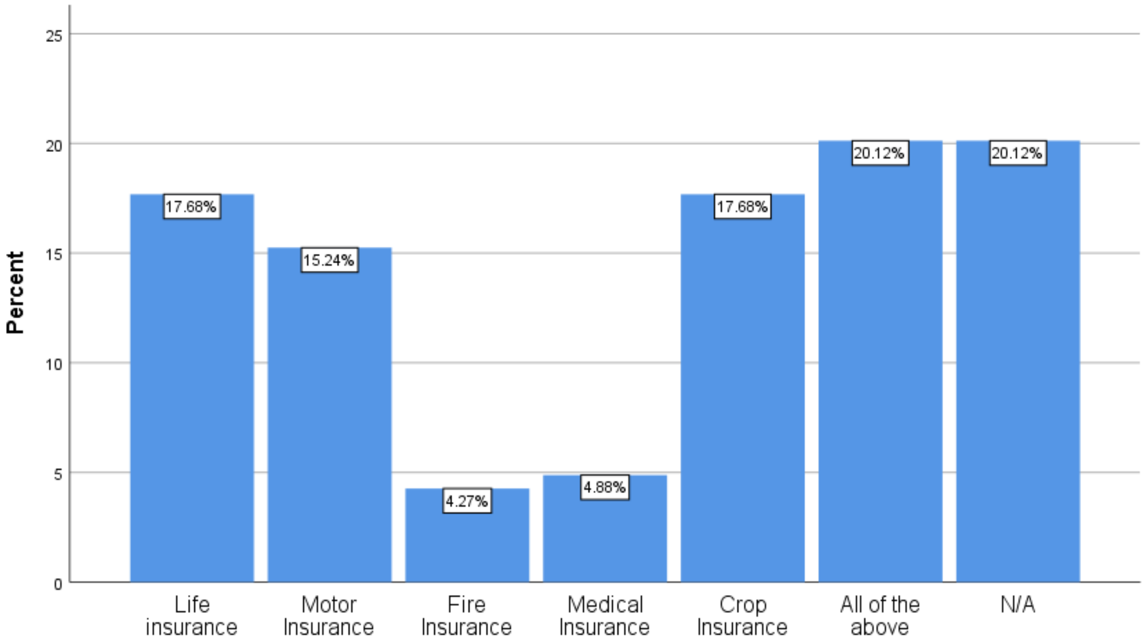


Figure 1: Awareness of Various types of Insurance Products in Malawi

6.3. Barriers/Challenges to insurance uptake

Research findings provide the below insights about the barriers to insurance uptake by farmers in the various regions:

6.3.1. Limited awareness and understanding

In regions like Machinga, Salima, and Lilongwe, where agricultural activities are prominent, there is often a disparity in awareness levels regarding insurance products. Farmers do not usually fully comprehend the benefits of insurance or how it can safeguard their livelihoods amidst unpredictable weather patterns and market fluctuations. Without adequate education and awareness campaigns tailored to the local context, misconceptions about insurance may persist, hindering uptake.

6.3.2. Limited access to insurance products and services

Rural areas in Machinga, Kasungu, and Karonga frequently face challenges related to financial inclusion and access to formal banking and insurance services. Sparse population densities and inadequate infrastructure exacerbates these issues. Farmers in remote villages may have to travel long distances to access insurance providers or may not have any nearby options, limiting their ability to secure insurance coverage.

6.3.3. Affordability and perceived value

High poverty rates in regions like Machinga mean that farmers often prioritize immediate needs over long-term risk management. Even if insurance products are available, premiums may be perceived as unaffordable, especially among smallholder farmers with limited disposable income. Without tangible demonstrations of the value of insurance or flexible payment options, uptake may remain low.

6.3.4. Trust and perceived risk

Historical factors, such as past negative experiences with financial institutions or unreliable government support, may contribute to farmers' distrust of insurance providers. A very good example is areas like Blantyre.

6.3.5. Limited access to information

Findings from Kasungu, Salima, Machinga and Karonga indicate challenges related to information dissemination and literacy levels. Farmers may lack access to reliable information about insurance products, coverage options, and claims processes. In regions with low digital penetration, such as Machinga, traditional communication channels like radio broadcasts and community meetings may be more effective in reaching farmers.

6.3.6. Inadequate government support

Despite the potential benefits of agricultural insurance, government support may be lacking. Inconsistent policies, regulatory bottlenecks, and limited budget allocations for agricultural risk management initiatives can hinder the development and promotion of insurance products tailored to farmers' needs.

6.3.7. Infrastructure challenges

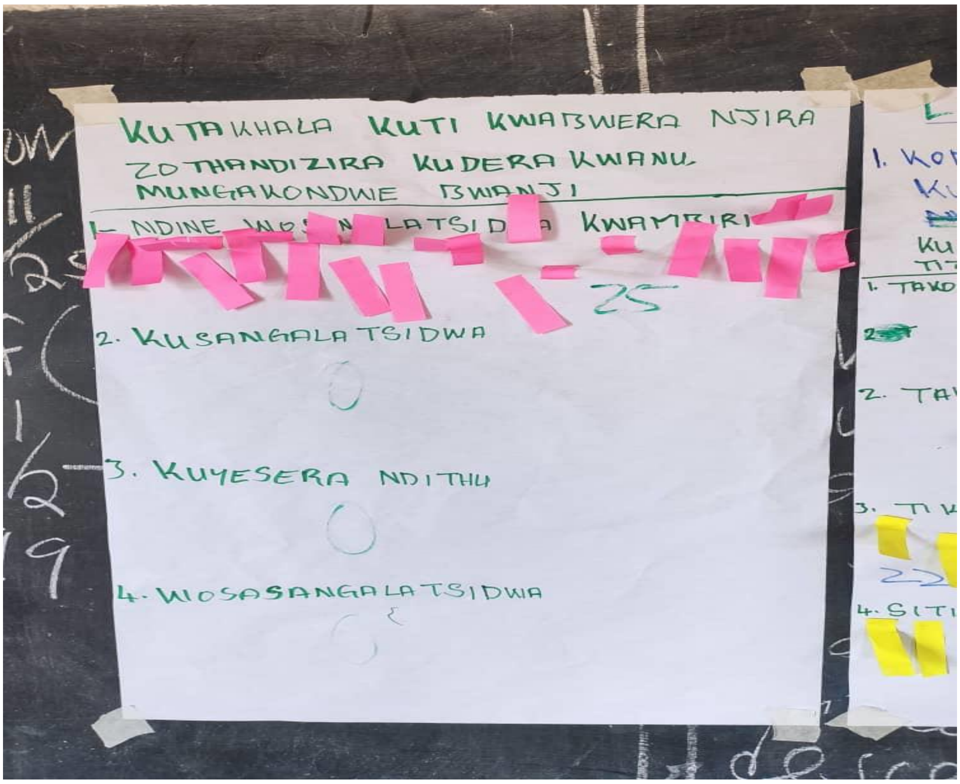
Poor infrastructure, including impassable roads during rainy seasons and unreliable electricity supply, poses significant barriers to insurance distribution and uptake in rural areas like Karonga and Machinga. Without adequate infrastructure improvements, insurance providers may struggle to reach remote communities and deliver services effectively.

By addressing these nuanced barriers with region-specific strategies and collaborative efforts involving stakeholders at all levels, it's possible to catalyze the adoption of insurance among farmers in Blantyre, Machinga, Lilongwe, Salima, Kasungu and Karonga, thereby enhancing their resilience and long-term prosperity.

7. INTEREST IN CROP INSURANCE

To gauge the interest amongst farmers the discussions also looked at this on four levels. The responses were categorized into four responses into four Likert scale: Highly interested; interested; somehow interested and not interested at all.

This revealed that amongst all farmers that were met, more than 95% were highly interested in crop insurance. The indication was that most farmers do not have enough coping mechanisms when huge losses occur and having insurance would be beneficial and would provide relief in times of need. The FGDs revealed that the demand for crop insurance is there and farmers are prepared to take up the insurance if made available to them.

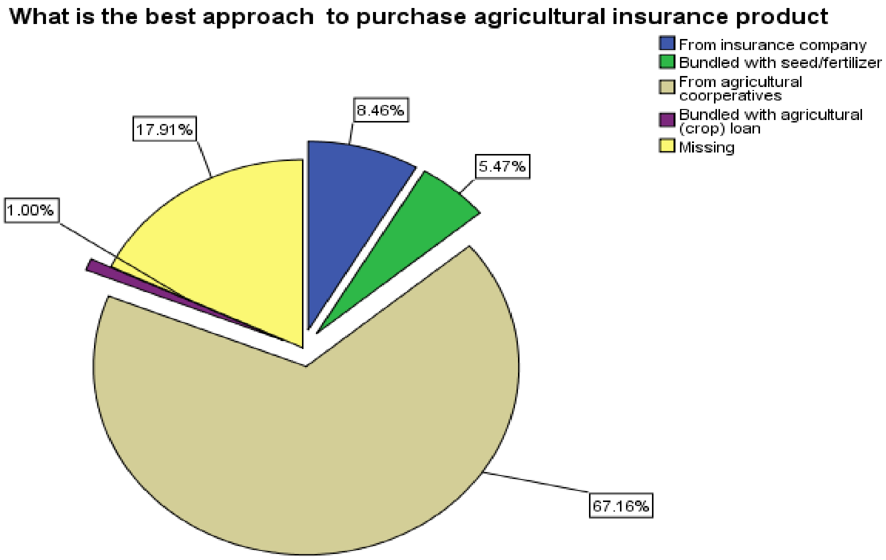


"If the agricultural insurance is introduced, will likely be willing to participate in it."
Farmer in Lilongwe

"Bundling agricultural insurance to AIP would mean we will pay together as a package, and it will be a better option to do that… ***Agricultural Extension Development Office***

A small section of farmers indicated that they were either interested or somehow interested only due to the fact that crop insurance is a new concept to them and skepticism plays a factor when anything new is being introduced. This means that if there is civic education on the importance of agricultural related insurance, a good number of the farmers would be willing to participate in the crop/agricultural insurance.

7.1. Approaches to Purchase Agricultural Insurance



7.1.1. Agricultural Cooperatives

Majority of the farmers who responded the survey (67%) responded that they would prefer the agricultural insurance be handled by farmer cooperatives. This might be the case because most farmers in EPAs are familiar with cooperatives and majority belongs to some of these farmer groupings. In other EPAs like Domasi where farmers belong to irrigation schemes, they are also associated in one way or the other in farming cooperatives. This is the significant reason why majority of the farmers opted for the agricultural cooperatives.

7.1.2. Insurance Companies

Private insurance companies were not cited by the majority of the farmers in the sampled EPAs (8%). Farmers suggested though during the FDGs that they would be willing to enroll with the private insurance companies if they would be informed about the benefits of the agricultural insurance policies. Furthermore, farmers lamented that the insurance companies will need to be physically available (just as the cooperatives) so that insurance claims and other associated transactions would be easy for the farmers. Some farmers were of the view that private insurance companies have offices and operate in major cities and urban centres. If the private insurance companies are to be involved in agricultural insurance, they need to set up physical offices (or community insurance workers) for easy claims related to agricultural losses.

7.1.3. Bundled with seed/Fertilizer

5% of the farmers in all the sampled Extension Planning Areas opted for bundled agricultural insurance with fertilizer. Though not suggested by many, this could be one of the most effective ways to deal with agricultural losses in Malawi. For instance, the numbers of seed/fertilizer subsidies/beneficiaries in Malawi exceed 1.5 million every year. This means that millions of households are at the edge of losing some form of agricultural produce in Malawi. Bundling the seed/fertilizer subsidy purchases to agricultural insurance would mean famers paying once for both the service and their farm inputs. If some unforeseeable circumstance happens, they just have to claim compensation from relevant insurance offices.

7.1.4. Bundled with Agricultural (Crop) Loan

This method was also not cited by many farmers. Agricultural insurance could also be bundled with agricultural (crop) Loans so that famers are covered in times of agricultural losses. In Malawi, several institutions, both state and private provide several loan facilities, including agricultural loans. State institutions like the National Economic Empowerment Fund (NEEF) provide agricultural loans to farmers. The institution might leverage collaborations with agricultural insurance providers in the country. Other Non-Governmental Organizations like One Acre Fund provide agricultural inputs loans, and might be interested in similar insurance agricultural loan packages.

7.1.5. Conclusions and Recommendations

Most of the farmers in rural Malawi are small-scale farmers, and the causes of agro-losses in Malawi are not significantly different from other countries within the region. Agro-losses in Malawi are caused by several factors including poor quality of farm inputs, lack of labour supply, loss from wild animals, excess rainfall (leading to flooding), and pests and diseases. A majority of the farmers/AIP beneficiaries (80%) expressed interest to join an agricultural related scheme. This is the case despite the fact that for many farmers, an agricultural related scheme is a new concept, but they were of the view that it can work better with their agricultural activities to prevent them from shocks. The study found out that majority of the farmers was of the view that the agricultural related insurance schemes be coordinated by farmer cooperatives. Private insurance companies could play a bigger role in the provision of agricultural related insurance, especially if they are physically present in farmer localities and villages. Bundling an agricultural insurance scheme with AIP is viable due to the readiness of farmers to adopt it and a close working relationship with The Ministry of Agriculture will ensure trust and confidence in farmers.

7.2. **Regional Nuances:**

Blantyre:

- **Distinct challenge:** Random farming practices and lack of expertise.
- **Regional opportunity:** Insurance products may include coverage for expert consultation, promoting sustainable and informed farming practices.

Machinga:

- **Distinct challenge:** Intensive reliance on rainfall for millet cultivation.
- **Regional opportunity:** Tailor insurance coverage to address rainfall-dependent losses specific to rice farmers in the region

Kasungu

- **Distinct challenge:** Market access and low crop prices.
- **Regional opportunity:** Develop insurance products that provide compensation during market fluctuations, addressing the unique market challenges faced by farmers in Kasungu

Karonga

- **Distinct challenge:** Pests affecting rice
- **Regional opportunity:** Insurance products can consider coverage against losses resulting from strong winds, supporting adaptation strategies for sricefarmers in Karonga.

Salima

- **Distinct challenge:** Shift in climate patterns affecting maize cultivation.
- **Regional opportunity:** Develop insurance coverage against losses resulting from climate shifts, supporting adaptation strategies for maize farmers in Salima

7.3. Agricultural risks faced by farmers.

Agriculture faces a myriad of challenges that significantly impact the livelihoods of small-scale farmers. Understanding the frequency and nature of these challenges is crucial for implementing targeted interventions and policies aimed at enhancing the resilience of farming communities. Similar quantitative findings speak into the challenges discussed in FGDs and IDIs.

The table below presents the risks mentioned by farmers during quantitative interviews. Through a detailed analysis, this information provides valuable insights into the recurrent challenges faced by farmers, shedding light on the areas where strategic interventions can make a meaningful impact. Exploring the nuances of these risks allows for the development of informed strategies that not only address immediate concerns but also contribute to the long-term sustainability of small-scale agriculture. Below are quantitative findings on frequency of risks faced by farmers.

Table 3:How often do you experience the risk?

Risk	**How often do you experience this risk?**				
	Almost every year.	**Every 1 - 3 yrs.**	**Every 3 - 5 yrs.**	**Every 5 - 10 yrs.**	**Every 10 yrs.**
Poor quality & access of inputs	55%	33%	8%	3%	1%
Lack of Labor supply	38%	36%	15%	5%	6%
Loss from Stray / Wild Animals	55%	25%	14%	4%	2%
Unseasonal rain	44%	28%	26%	1%	1%
Excess Rainfall	11%	28%	30%	15%	16%
Drought / Deficient Rainfall	75%	13%	9%	2%	1%
High Winds / Storm	29%	38%	20%	8%	5%
Adverse Price Movements	70%	18%	10%	0%	1%
Pests and diseases	64%	10%	6%	1%	0%

7.3.1. Dominant risks:

Drought/Deficient Rainfall
This is usually the case in many of the sampled locations because a majority of small-scale farmers in Malawi does rain-fed agriculture. Any slight variations in rainfall patterns in many regions in Malawi affect agricultural production. Prolonged dry seasons were cited by most of the EPAs as the main cause of losses both in crop and livestock farming. Farmers highlighted that prolonged dry spells cause crops and seedlings to die in their early stages.

Pests and diseases
A staggering 64% of farmers interviewed identified pests and diseases as a recurrent risk, making it the most prevalent concern among small-scale farmers. This indicates a significant and widespread challenge that farmers consistently face, potentially posing severe threats to crop yields and livelihoods.

Adverse price movements
A notable 70% of the farmers interviewed expressed concerns about adverse price movements. This suggests that farmers are acutely aware of market dynamics and the impact these movements can have on their financial well-being. Developing strategies to mitigate the effects of price fluctuations could be crucial for financial stability.

Poor quality & access of inputs
More than half of the respondents (55%) identified poor quality and limited access to inputs as a recurring risk. This highlights the importance of addressing issues related to the quality and availability of agricultural inputs, emphasizing the need for interventions in the supply chain.

7.3.2. Frequency of risks:

Risks such as poor quality and access to inputs, loss from stray/wild animals, drought/deficient rainfall, and pests and diseases are perceived as frequent by a substantial portion of respondents. This underscores the chronic nature of these challenges, requiring sustained and effective mitigation strategies.

Adverse price movements are also perceived to occur regularly, with 70% indicating this risk. This reflects the dynamic and volatile nature of agricultural markets, indicating the necessity for risk management tools and mechanisms.

7.3.3. Climate-related risks:

Drought/Deficient Rainfall
A significant 75% of respondents highlighted drought or deficient rainfall as a recurrent risk. This is crucial information, emphasizing the vulnerability of these farming communities to climate-related challenges. Climate-resilient farming practices and water management strategies may be pivotal in addressing this concern.

Unseasonal Rain and Excess Rainfall
While not as frequent as drought, the occurrences of unseasonal rain (44%) and excess rainfall (11%) are still notable. Farmers need strategies to adapt to unpredictable weather patterns, indicating the importance of climate-smart agricultural approaches.

7.3.4. Workforce-related challenges:

Labor Supply
This risk is perceived as a moderate concern, with 38% indicating its occurrence. This suggests that managing labor resources effectively is important for small-scale farmers, especially during critical farming periods.

In summary, the insights gathered from this data underscore the multifaceted challenges faced by small-scale farmers. Effective strategies and interventions should encompass pest and disease management, market risk mitigation, improvements in input accessibility, and climate-resilient agricultural practices. Additionally, tailoring support to address specific challenges with labor supply and weather-related events will contribute to building the resilience of small-scale farming communities.

7.4. Severity of risks

The data reveals the impact of various risk factors on crop losses among the respondents.

Table 4: How severe/impactful is this risk?

Risk	**Negligible / minor crop loss.**	**Small but significant crop loss.**	**Medium crop loss.**	**High crop loss.**	**Complete crop loss**
Poor quality & access of inputs	29%	26%	27%	17%	1%
Lack of Labor supply	44%	24%	20%	12%	0%
Loss from Stray / Wild Animals	18%	13%	36%	25%	8%
Unseasonal rain	15%	14%	34%	33%	4%
Excess Rainfall	18%	9%	27%	38%	8%
Drought / Deficient Rainfall	8%	8%	25%	46%	13%
High Winds / Storm	10%	9%	40%	33%	7%
Adverse Price Movements	13%	19%	28%	39%	1%
Pests and diseases	7%	6%	17%	54%	16%

7.4.1. Poor Quality & Access of Inputs

While almost one-third of respondents experience negligible or minor crop loss due to poor quality and access of inputs, a substantial 45% face medium to high crop loss. This highlights the critical role that input quality plays in crop outcomes and the need for interventions to enhance accessibility and ensure better-quality inputs.

7.4.2. Lack of Labor Supply

A significant portion (44%) reports negligible or minor crop loss due to labor shortages. However, 32% face medium to high crop loss, emphasizing the impact of labor availability on agricultural productivity. Exploring ways to address labor challenges can contribute to mitigating crop loss in affected areas.

7.4.3. Loss from Stray/Wild Animals

Losses from stray or wild animals are perceived as impactful, with 61% experiencing medium to high crop loss. This highlights the urgency of implementing effective strategies for wildlife management to reduce crop damage and protect farmers' livelihoods.

7.4.4. Climate-Related Risks (Unseasonal Rain, Excess Rainfall, Drought/Deficient Rainfall, High Winds/Storm)

Climate-related risks vary in their severity and impact. Unseasonal rain and excess rainfall both exhibit a relatively balanced distribution across severity levels. Drought/deficient rainfall, however, is particularly impactful, with 71% reporting medium to high crop loss. High winds/storms also result in substantial crop loss for 80% of respondents, indicating the vulnerability of crops to extreme weather events.

7.4.5. Adverse Price Movements

The majority (67%) of respondents report medium to high crop loss due to adverse price movements. This suggests the need for market-oriented interventions and risk management strategies to stabilize prices and protect farmers from financial losses.

7.4.6. Pests and Diseases

Pests and diseases pose a significant threat, with 71% reporting medium to high crop loss. This underscores the importance of pest and disease management practices, including early detection and preventive measures, to safeguard crops and farmers' incomes.

"Pests and diseases are a big challenge. Sometimes there is a crop infection that will spread through several villages here in Karonga before it can be controlled. In some cases, the diseases can be present throughout the entire season and the situation is worsened by fake pesticides that are sometimes sold to farmers. ***"Agricultural Extension Development Office.***

Salima

Survey findings underscore the multifaceted challenges faced by small-scale farmers, highlighting the need for targeted interventions addressing input quality, labor availability, wildlife management, and climate resilience, among other factors. Strategic measures aimed at reducing the severity of these risks can contribute to building a more resilient and sustainable agricultural sector.

"Some livestock farmers do not enclose their animals, hence they feed on our crops. This." ***Maize farmer In Blantyre on pests challenges***

"For instance, last year, there were dry spells in many districts in southern region. We faced significant challenges as some people cultivated even up to ten acres, yet they did not even obtain a yield of corn for roasting." ***Maize farmer on little yields in Blantyre***

7.4.7. Changes in weather parameters

Understanding the dynamic interplay between climate patterns and agricultural practices is paramount in developing resilient solutions for farming communities. Survey findings about farmer experiences over the past 5-10 years shed light on the nuanced changes in various weather parameters across different regions, including Blantyre, Machinga, Salima, Kasungu, Lilongwe and Karonga. This comprehensive analysis encompasses the perspectives of maize, rice, and soya farmers, delineating the challenges they face and the evolving climate scenarios.

"We can see changes in seasons because of climate change and we know this is affecting farmers because the seasons are increasingly becoming unpredictable. An early or late planting because of unpredictable weather in most cases affects the harvest. There is not much we can do apart from provide information on weather forecasts and recommend drought tolerant crop varieties." ***Agriculture District Development Official***

"These days the weather is unpredictable. When you expect rain, it does not come or it will delay. So you can be there when you not sure when to plant and sometimes you can follow the information on Radio or from the Agricultural officer and still the rain will not come. Sometimes you have enough rains to plant, then 2 months of drought, leading to more crop losses" ***Maize Farmer, Salima***

As climate change continues to exert its influence, farmers navigate shifting weather patterns that significantly impact crop cultivation. From alterations in rainfall patterns and increased temperatures to the frequency of unseasonal rains and dry spells, each parameter contributes uniquely to the agricultural landscape. This data not only captures the farmers' observations but also serves as a foundation for insightful analyses aimed at informing the development of innovative insurance products tailored to address the diverse challenges faced by farmers in different regions and cultivating various crops.

In this context, the following exploration delves into the specific changes reported by farmers, offering valuable insights into the intricacies of these shifts. Additionally, the analysis aims to draw connections between the observed weather variations and potential opportunities for developing insurance products that can act as a crucial safety net for farmers, promoting sustainable agricultural practices and safeguarding livelihoods against the uncertainties posed by a changing climate.

Table 5:Weather changes as perceived by farmers over the past 5 – 10 years

Weather conditions	Change	Overall	Blantyre	Machinga	Lilongwe	Salima	Kasungu	Karonga
No of Rainy days	No Change (+/-)	34%	36%	5%	5%	4%	0%	60%
	Decrease (--)	50%	53%	91%	80%	93%	100%	40%
	Increase (+ +)	16%	11%	5%	15%	2%	0%	0%

Seasonal Rainfall Volume	No Change (+/-)	34%	36%	2%	10%	4%	0%	56%
	Decrease (--)	45%	58%	95%	80%	96%	100%	44%
	Increase (+ +)	21%	7%	2%	10%	0%	0%	0%
Length of Dry Spells	No Change (+/-)	29%	38%	0%	0%	2%	0%	49%
	Decrease (--)	17%	47%	12%	25%	46%	11%	49%
	Increase (+ +)	53%	16%	88%	75%	52%	89%	2%
Incidence of Unseasonal Rains	No Change (+/-)	33%	44%	2%	0%	15%	11%	47%
	Decrease (--)	27%	56%	91%	75%	70%	89%	53%
	Increase (+ +)	39%	0%	7%	25%	15%	0%	0%
Days of High Temperature	No Change (+/-)	33%	42%	44%	25%	26%	15%	49%
	Decrease (--)	15%	49%	9%	5%	2%	26%	47%
	Increase (+ +)	52%	9%	47%	70%	72%	59%	5%
Days of Low Temperature	No Change (+/-)	33%	36%	58%	40%	28%	37%	51%
	Decrease (--)	49%	56%	2%	30%	59%	56%	49%
	Increase (+ +)	18%	9%	40%	30%	13%	7%	0%
Average Temperature	No Change (+/-)	43%	40%	60%	25%	30%	48%	49%
	Decrease (--)	30%	58%	2%	15%	17%	4%	44%
	Increase (+ +)	26%	2%	37%	60%	52%	48%	7%

No of rainy days

Overall, 50% of the respondents report a decrease in rainy days. A decrease in rainy days poses a risk of water scarcity for crops. ***Insurance Implication:*** *Weather-index insurance could be designed to compensate farmers for reduced rainfall, supporting income stability during dry seasons.*

Seasonal rainfall volume

Overall, 45% of the respondents note a decrease in seasonal rainfall volume. A reduction in rainfall volume may lead to drought conditions, affecting crop yields ***Insurance Implication:*** *Parametric insurance tied to rainfall volume could provide financial relief to farmers during droughts.*

Length of dry spells

Overall, 53% of farmers interviewed have observed an increase in the length of dry spells over the past 5 to 10 years. Longer dry spells may contribute to water stress, impacting crop health. ***Insurance implication:*** *Insurance products could cover losses related to prolonged dry spells, offering farmers protection against crop damage.*

Days of high temperature: 40% of the interviewed farmers note an increase in days with high temperature. Higher temperatures can impact soil moisture and crop growth. ***Insurance Implication:*** *Temperature-index insurance might protect farmers from losses caused by extreme heat affecting crop productivity.*

Days of low temperature: 42% report no change in the days of low temperature. Stable low temperatures may benefit certain crops. ***Insurance Implication:*** *Crop-specific insurance considering temperature variations could cater to farmers dealing with temperature-sensitive crops.*

Average temperature: 31% of the farmers observe an increase in average temperature. Rising average temperatures can contribute to heat stress in crops. ***Insurance Implication:*** *Heat stress insurance could be developed to assist farmers in mitigating losses from temperature-induced crop damage.*

Incidence of unseasonal rains

Overall, 39% of the farmers report an increase in unseasonal rains. While fewer unseasonal rains may reduce flooding risks, they can disrupt farming cycles. ***Insurance Implication:*** *Insurance against crop losses due to unseasonal rains could aid farmers in managing unexpected weather events.*

Take-aways:

Multi-Peril Insurance: Consider multi-peril insurance covering various weather-related risks to provide comprehensive protection against a range of adverse conditions where applicable.

Customized Solutions: Tailor insurance products to specific crops and regions, considering the unique weather challenges faced by farmers in different areas.

Parametric Triggers: Use parametric triggers based on measurable weather parameters to streamline the claims process and provide quicker payouts.

Risk Reduction Education: Integrate insurance offerings with educational programs to enhance farmers' risk awareness and encourage preventive measures against weather-related losses.

Government and Private Collaboration: Encourage collaboration between government agencies, private insurers, and farmers to create effective and accessible insurance schemes.

Developing insurance products that align with the identified weather challenges can significantly contribute to building resilience among farmers, safeguarding their livelihoods, and promoting sustainable agriculture.

7.5. Financial coping strategies

7.5.1. Savings

Financial coping strategies play a crucial role in the resilience of small-scale farmers facing challenges. The predominant approach, employed by 62% of respondents, involves leveraging savings as a financial buffer. This strategy reflects a prudent attempt to create a safety net; however, it is noteworthy that the savings mentioned are frequently not of substantial magnitude. Consequently, when confronted with adversities, farmers may find their financial reserves insufficient.

"When things get bad, I am forced to get out my savings. If I use all my saving that I keep at home, then I resort to going and get that from family members…" ***Farmer, Karonga***

7.5.2. Loans

The second most prevalent financial coping strategy among small-scale farmers is borrowing money, with 38% of respondents resorting to this method. This highlights the financial intricacies and constraints within the farming community, where external financial support is often sought to navigate challenges. It's essential to recognize the implications of borrowing, as it introduces an additional layer of financial commitments for farmers.

Furthermore, it is crucial to emphasize that the savings utilized by the majority of farmers might not be robust, compelling them to implement austerity measures. This often involves cutting back on non-vital expenditures, such as meals and healthcare. This sheds light on the economic vulnerability of small-scale farmers and underscores the need for targeted interventions and financial instruments that align with their specific needs and challenges. Developing sustainable financial mechanisms that go beyond mere savings and borrowing, while considering the socioeconomic context of farmers, becomes imperative for fostering long-term resilience within the agricultural sector.

7.5.3. Cutting back on obligations like payment of school fees

Findings from FGDs also reveal a disquieting trend as the adoption of a financial strategy where 10% of farmer households sometimes discontinue their children education in order to reallocate the tuition to support in addressing challenges faced by the household. This practice underscores the substantial trade-offs and sacrifices that families are compelled to make when grappling with financial challenges.

"Sometimes the children must stay at home when money has become lost. You cannot pay school fees and leave people at home to die of hunger. They stay at home and help in the garden abet then when money shows up, I pay the school fees. One time I tried begging the headmaster that I will pay when after selling my Maize, but he refused, so I had no option but for my son to stay home." ***Farmer, Salima***

The decision to withdraw children from school as a financial coping mechanism raises profound concerns regarding its potential long-term repercussions on both education and livelihoods. Education is a cornerstone for future opportunities and socio-economic advancement, and the interruption of this process can have far-reaching consequences for the affected children and their families.

This finding highlights the intricate interplay between economic hardships and educational aspirations within these communities. Addressing such practices requires a comprehensive understanding of the socio-economic dynamics at play and underscores the urgent need for targeted interventions that mitigate financial pressures without compromising the educational pursuits of the younger generation. As we delve into these complexities, it becomes evident that sustainable solutions must go beyond immediate financial relief and encompass strategies that promote education as a catalyst for long-term resilience and community well-being.

7.5.4. Government support initiatives

Findings reveal a notable trend with just 6% of the farmers interviewed relying on financial support from the government as a coping strategy. This finding underscores the limited dependence of most small-scale farmers on governmental assistance, highlighting the prevalence of alternative financial coping mechanisms within these communities. The low percentage of farmers availing themselves of government support emphasizes the necessity for diverse and supplementary financial strategies among small-scale farmers. While government assistance can play a crucial role, the data suggests that the current level of reliance on such support is relatively modest. This limited reliance on government support prompts an exploration into the landscape of financial resilience within the surveyed small-scale farming communities. Understanding the factors contributing to this trend is crucial for policymakers and stakeholders aiming to enhance support structures for farmers. It signals the importance of fostering a multi-faceted approach to financial resilience, encompassing not only governmental aid but also promoting self-reliant strategies and exploring potential avenues for collaborative initiatives between public and private sectors.

7.5.5. Agricultural insurance

The data underscores the potential significance of agricultural insurance as a financial coping strategy. Despite the challenges faced, respondents expressed a clear need for external support in the form of pest control assistance, knowledge dissemination, and access to experts like agricultural researchers and meteorologists. The introduction of agricultural insurance is seen as a vital step in addressing and mitigating the various risks faced in the agricultural sector, especially considering the readiness of the majority to adopt it once introduced.

Farmers interviewed conveyed a sense of unpreparedness to confront the risks, relying primarily on local techniques and often cultivating only a portion of their available land. This strategic reduction in farming scale reflects their pragmatic response to minimize potential losses. With majority of the respondents being the beneficiaries of the government funded AIP, it would be vital to bundle the agricultural insurance with AIP.

Key take-outs:
Resource limitations: Small-scale farmers face resource limitations, affecting their ability to manage agricultural risks effectively.

Financial strain: Financial coping strategies, such as using savings and borrowing money, highlight the financial strain on farmers. The sacrifices, including children quitting school, underscore the significant challenges they face.

Limited government support: The limited reliance on government support suggests a need for alternative sources of financial assistance, such as agricultural insurance.

Pragmatic farming practices: The reduction in farming scale reflects farmers' pragmatic response to mitigate potential losses, indicating a need for more sustainable and resilient agricultural practices.

Importance of external support: Farmers express a clear need for external support, emphasizing the importance of interventions, knowledge dissemination, and access to expertise in addressing the challenges they face.

Findings reveal the complex financial challenges small-scale farmers in Malawi encounter and emphasize the importance of tailored interventions, including the comprehensive introduction of agricultural insurance, to support them in building resilience against agricultural risks.

"It means you prepare money, you have a financial reserve, so that in case of disasters like corn-eating pests, you can take that money, buy pesticides, and spray." ***Maize farmer in Machinga***

7.6. Preventive measures to cope with losses

The findings from the focus group discussions (FGDs) on agricultural loss coping mechanisms among small-scale farmers provide strong insights into their priorities and challenges. These insights can guide the introduction, sensitization, and uptake of agricultural insurance:

Prevention vs. coping priorities
Farmers prioritize preventive measures like timely planting, irrigation, and the use of improved inputs to reduce agricultural losses. However, there is a distinction between their perceived preparedness for prevention and the actual preparedness to cope with losses when they occur. This emphasizes the need to shift the focus towards comprehensive risk management, including coping strategies.

Government support

The Ministry of Agriculture addresses the direct impacts of climate change on crops through advancements in science, including the use of pesticides and weather forecasting. Information on weather forecasts helps farmers make informed decisions on when to plant in relation to season expectations. This in turn helps to mitigate risk.

> *"We try to provide the lasted information on weather forecasts and climate change that could affect Farmer harvests. The ministry also does research on pesticides that farmers use. In some, cases we have advised farmers against use of fake pesticides that put their crops at risk. "**District Agricultural Extension Official***

Challenges in articulating coping strategies

The challenge in articulating specific coping strategies initially suggests a potential gap in knowledge or awareness. Introducing agricultural insurance should address this gap by providing farmers with clear, practical information on how insurance can complement their existing efforts in managing agricultural risks.

> *"Education and sensitization to farmers is important. They are unlikely to take up a program unless they have been sensitized about it and one addresses some of the cultural beliefs. **Traditional leader, Salima***

Perceived preparedness levels

Farmers' self-perceived preparedness levels indicate a willingness to engage in practices that prevent losses. However, there may be an opportunity to align their perceptions with the broader concept of preparedness, encompassing both prevention and effective coping strategies. Education and awareness programs can play a crucial role in achieving this alignment.

Importance of right education

The recurring theme of the need for the right education emphasizes the importance of tailored and targeted educational initiatives. These programs should not only highlight the benefits of agricultural insurance but also provide practical insights into how it can be integrated into their existing risk management practices.

> *"...conducting intensive sensitization and educating farmers about insurance is the key to its uptake. **"Agriculture officer, Karonga.***

Proposed strategies for introduction, sensitization, and uptake of agricultural insurance:

Tailored education programs: Develop education programs that are tailored to the specific needs and contexts of small-scale farmers. These programs should focus on explaining the concept of agricultural insurance, its benefits, and how it complements existing risk management practices.

Demonstrate real-life scenarios; Use real-life scenarios and case studies to demonstrate how agricultural insurance can provide financial support during times of crop failure or other losses. Showing tangible benefits in relatable contexts can enhance farmers' understanding and appreciation of the insurance concept.

Community workshops and discussions; Organize community workshops and discussions to facilitate knowledge exchange among farmers. Encourage experienced farmers who have benefited from agricultural insurance to share their success stories, creating a positive narrative around insurance adoption.

Local language and cultural sensitivity; Ensure that communication materials and workshops are presented in the local language spoken in the area of jurisdiction, considering cultural nuances. This enhances the accessibility of information and fosters a sense of inclusivity, making it more likely for farmers to engage with the content.

Partnerships with local agricultural experts; Collaborate with local agricultural experts, extension services, and agricultural researchers to provide farmers with credible information. This builds trust and ensures that the educational content is aligned with local agricultural practices and challenges.

Pilot programs and demonstrations; Consider implementing pilot insurance programs in collaboration with insurance providers. These pilot programs can serve as practical demonstrations of how insurance works, allowing farmers to see the benefits firsthand before committing to full-scale adoption.

Continuous feedback and evaluation; Establish mechanisms for continuous feedback and evaluation of the effectiveness of education and sensitization efforts. Farmers' feedback can provide valuable insights into the success of the programs and areas that may require further attention or adjustment.

In summary, a strategic and comprehensive approach to introducing and promoting agricultural insurance involves tailored education, community engagement, real-life demonstrations, and a continuous feedback loop. Aligning farmers' perceptions with the broader concept of preparedness, including coping strategies, is crucial for the successful uptake of agricultural insurance among small-scale farmers.

FGD findings regarding the self-perceived wellness among small-scale farmers in dealing with agriculture risks, as indicated by the Likert scale ratings, provide insights into the farmers' confidence levels.

7.7. Coping Strategies to protect farmers.

Qualitative and quantitative findings reveal valuable insights into the challenges faced by farmers and their aspirations for mitigating agricultural losses. The conversation highlights the farmers' collective plea for support, ranging from equipment provision to educational initiatives. Notably, the discussion delves into the potential of agricultural insurance to safeguard against unforeseen disasters. The respondents express a willingness to contribute to such insurance but emphasize the importance of flexibility in payment based on varying seasonal incomes. The dialogue underscores the farmers' desire for tailored solutions, accessible registration processes, and ongoing communication with stakeholders as presented below;

Crop diversification: Farmers should be encouraged to diversify their crops to mitigate the impact of climate-related risks on a single crop. This strategy can create more resilient farming systems. In return agriculture insurance products could offer tailored coverage for diverse crops, protecting farmers from losses due to climate-related challenges specific to each crop.

Climate-resilient crop varieties: Government and Agriculture officers should consider promoting the adoption of climate-resilient and drought-tolerant crop varieties to enhance the ability of crops to withstand adverse weather conditions. In turn insurance solutions can incentivize farmers to invest in improved seed varieties by providing coverage against potential losses associated with transitioning to new and more resilient crops.

Improved irrigation systems: Farmers should be encouraged to invest in modern irrigation systems to reduce dependency on rainfed agriculture, providing farmers with more control over water supply during dry periods. Agriculture insurance can offer coverage for investments in irrigation infrastructure, ensuring financial protection in case of equipment failure or water scarcity.

Early warning systems: The ministry should implement and enhance early warning systems to provide farmers with timely information about impending weather-related risks. Insurance products can be linked to early warning systems, offering reduced premiums for farmers who proactively respond to forecasts and take preventive measures.

Capacity building and education: Conduct training programs and workshops to educate farmers about climate-smart agricultural practices and risk management strategies. Agriculture insurance providers can collaborate with extension services to integrate educational components into insurance packages, promoting informed decision-making among farmers.

Community-based insurance programs: Foster the formation of community-based insurance programs, where farmers collectively contribute to a risk pool. Agriculture insurance can explore partnerships with local communities to develop and customize insurance products that address the specific climate risks faced by each community.

Government support and subsidies: Advocate for government support and subsidies to make agriculture insurance more affordable and accessible, especially for small-scale farmers. Insurance providers can collaborate with government initiatives to develop subsidized insurance programs, ensuring broader coverage and encouraging increased participation among farmers.

Integrated risk management approach: Adopt an integrated risk management approach that combines insurance with other risk reduction strategies, such as access to credit and improved agronomic practices. Collaboration with financial institutions and agricultural experts to offer comprehensive risk management packages, addressing multiple facets of farmers' challenges.

Implementing these strategies and exploring the corresponding opportunities within agriculture insurance can contribute to building a more resilient and sustainable agricultural sector, effectively reducing climate risks for farmers.

7.8. Insurance Awareness and Uptake

The overall awareness about insurance among small-scale farmers in the survey regions is positive, with 95% of respondents indicating awareness. This suggests a relatively high level of knowledge about insurance within the surveyed population. However, there are notable regional differences in awareness. Blantyre continues to have the highest awareness at 99%, followed closely by Machinga (93%), Lilongwe (90%), and Karonga (89%). These regions exhibit a strong understanding of insurance among small-scale farmers.

Figure 2 Overall Insurance Awareness

Overall Insurance Awareness

Overall
Yes – 95% | **No** -5%

By Gender

By Region

Blantyre	**99%**
Machinga	93%
Lilongwe	90%
Salima	89%
Kasungu	81%
Karonga	89%

Kasungu maintains an awareness level of 81%, showing that awareness is still relatively high but slightly lower than in the leading districts. Understanding the factors contributing to this difference can help tailor interventions to address specific challenges in Kasungu. Findings from IDIs with Agriculture officers highlight the primary challenge identified as lack of education among farmers regarding insurance. Several farmers across the survey regions may not understand the benefits of insurance, posing a significant obstacle for insurance providers.

> *"The challenge we have is that many farmers in rural areas have not been educated about insurance. Some might have heard about other types of insurance, but majority have not heard about agricultural insurance. This is a big obstacle because implementation will have to start after intensive sensitization"* ***Agriculture Development Extension officer.***

Addressing barriers: 5% of respondents indicating "No" across all regions face a number of barriers preventing them from being aware of insurance options among which is limited education and access to sensitization workshops. The report further identifies barriers, this is crucial for designing effective awareness campaigns and interventions. The findings suggest opportunities for improvement in regions with lower awareness. Tailored educational programs, community outreach, and communication strategies could be implemented to bridge the awareness gap in these areas.
In summary, while the overall awareness is positive, addressing regional variations and focusing on regions with lower awareness, such as Kasungu, can contribute to more comprehensive and effective strategies for promoting insurance awareness and adoption among small-scale farmers in Malawi.

Kasungu farmers

Awareness on Insurance Products and Interest in Agriculture Insurance:

In the study, it was observed that awareness of insurance is universally high, medical insurance emerged as the most frequently mentioned type of insurance, closely followed by motor vehicle insurance. This widespread awareness suggests that individuals in these regions possess knowledge about diverse insurance options.

Life insurance: Overall, only 18% of small-scale farmers are aware of life insurance. Regions with relatively higher awareness include Blantyre (7%), Lilongwe (3%), and Machinga (5%). Kasungu stands out with 50% awareness, indicating potential interest or awareness campaigns in this region. Karonga has 1% awareness, suggesting a need for targeted efforts to introduce life insurance.

Motor insurance: Motor insurance has higher overall awareness at 15%.

Fire insurance: Fire insurance has an overall awareness of 4%.

Crop Insurance: A large number of farmers that were utilized for the FGDs have heard of insurance. The results from the survey showed that 78% of the farmers were aware of several insurance packages. Only 22% narrated that they do not know any type of insurance. A huge cross section of farmers is aware of motor insurance and life insurance as these are the two most publicized by the insurance industry. However, when asked about crop insurance, a large number of farmers admitted that they were not familiar with this product. This is mainly due to the insurance industry not having an appetite to sell crop insurance mainly due to the huge claims that normally arise on a regular basis. The only EPA where almost all farmers were aware of crop insurance was Lirangwe EPA in Blantyre where it was hugely publicized and sold by PULA in coordination with Foundation for Irrigation and Sustainable Development (FISD). This could be because these EPAs are close to urban centres, and they are able to access information related to insurance services in Malawi.

Lirangwe Blantyre

There is a diverse range of awareness levels for different types of insurance across regions, indicating the need for tailored education and sensitization campaigns. Additional findings from the focus group discussions (FGDs) and IDIs provide valuable insights into the uptake of agricultural insurance among small-scale farmers within the selected regions.

Promising introduction with effective sensitization: The initial response to the introduction of agricultural insurance is positive, indicating promise for its success. However, the key to achieving expected targets lies in effective sensitization efforts. This highlights the importance of educational campaigns and outreach programs to ensure that farmers understand the benefits and mechanisms of agricultural insurance.

Concerns about deductions without visible actions: Farmers express concerns about their experiences and social interactions, particularly regarding insurance deducting funds without visible actions. This suggests a lack of transparency in the insurance process. Addressing this issue is crucial for building trust among farmers and ensuring that they see tangible benefits from their investment in insurance.

Need for transparent procedures: The highlighted need for transparent procedures underscores the importance of clear and straightforward processes in the administration of agricultural insurance. Transparent procedures not only build trust but also contribute to the overall success and sustainability of insurance programs.

Proportion that ever-purchased Agriculture insurance:

The data on the percentage of farmers who have ever purchased agricultural-related insurance presents a comprehensive picture of the current insurance landscape among the surveyed population. Findings from IDIs reveal that usage of insurance is low primarily because of lack of education about insurance.

> *"…education and sensitization is the key to wider acceptance of insurance. Building farmers' capacity and awareness is crucial for the success and usage of insurance programs."* ***District Agriculture Officer***
>
> *"The main obstacle is the lack of education. Farmers here in Karonga lack sufficient education on insurance. I do not think anybody has taken the initiative to use insurance especially the small-scale farmers."* ***District Extension Officer***

Table 6: Proportion of respondents that have purchased agricultural related insurance

Have you ever purchased agricultural related insurance?	**Yes**	**No**
Overall	**4%**	**96%**
Gender		
Male	3%	97%
Female	1%	99%
Region		

Blantyre	22%	78%
Machinga	0%	100%
Lilongwe	0%	100%
Salima	0%	100%
Kasungu	0%	100%
Karonga	0%	100%

Overall insurance adoption: The data reveals that 96% of the surveyed farmers, irrespective of gender and location, have not purchased agricultural-related insurance. This points to a significant gap in insurance coverage within the surveyed population.

Gender-based analysis: Both male and female farmers exhibit a general lack of insurance coverage (96% on average). There's no discernible difference in insurance uptake between male and female farmers in the surveyed areas.

Regional disparities:

Farmers in all regions, including Machinga, Mangochi, Salima, Lilongwe, Kasungu, and Karonga report zero adoption of agricultural insurance (100% in all regions). The uniform absence of insurance uptake across regions suggests a systemic challenge.

Implications for insurance development: The data underscores a substantial untapped market for agricultural insurance in the surveyed regions. Opportunities exist for insurance providers to introduce and tailor insurance products that address specific needs and concerns of farmers in these regions.

Factors affecting uptake: Identifying the reasons behind the lack of insurance uptake is crucial. This could involve exploring factors such as awareness, affordability, perceived benefits, and trust in insurance products.

Opportunities for development:

Educational initiatives: Launch targeted awareness campaigns to educate farmers about the benefits of agricultural insurance and dispel misconceptions.

Affordability measures: Explore options for making insurance more affordable, potentially through subsidies, group insurance models, or other financial incentives.

Tailored products: Develop insurance products that specifically address the unique challenges faced by farmers in each region, considering variations in climate, crops, and farming practices.

Collaboration and partnerships: Collaboration between insurance providers, agricultural extension services, and local governments can enhance outreach and facilitate the development of contextually relevant insurance solutions.

Policy recommendations: Policymakers may consider incentivizing insurance adoption through policy measures that make insurance more attractive and feasible for farmers.

In conclusion, the data highlights a substantial opportunity for the development and uptake of agricultural insurance. Addressing barriers to adoption and tailoring insurance products to the specific needs of farmers in different regions can contribute to building resilience and sustainability within the agricultural sector

7.9. Best approach to purchase insurance

The data on the best approach to purchase agricultural insurance products among farmers provides valuable insights into their preferences and potential opportunities for insurance development. Here's a detailed analysis:

What is the best approach to purchase agricultural insurance products?							
	Overall	Blantyre	Machinga	Lilongwe	Salima	Kasungu	Karonga
From agricultural cooperative	**54%**	24%	74%	75%	72%	22%	58%
Bundled with seed/ fertilizer	**24%**	73%	14%	0%	4%	41%	5%
From insurance company	**14%**	0%	2%	10%	20%	30%	26%
Bundled with agricultural (crop) loan	**6%**	2%	9%	5%	4%	7%	9%
Others	**1%**	0%	0%	10%	0%	0%	2%

Overall preferences:

Agricultural cooperative (54%): More than half of the surveyed farmers prefer purchasing insurance through agricultural cooperatives. This indicates a high level of trust and reliance on collective decision-making and support systems.

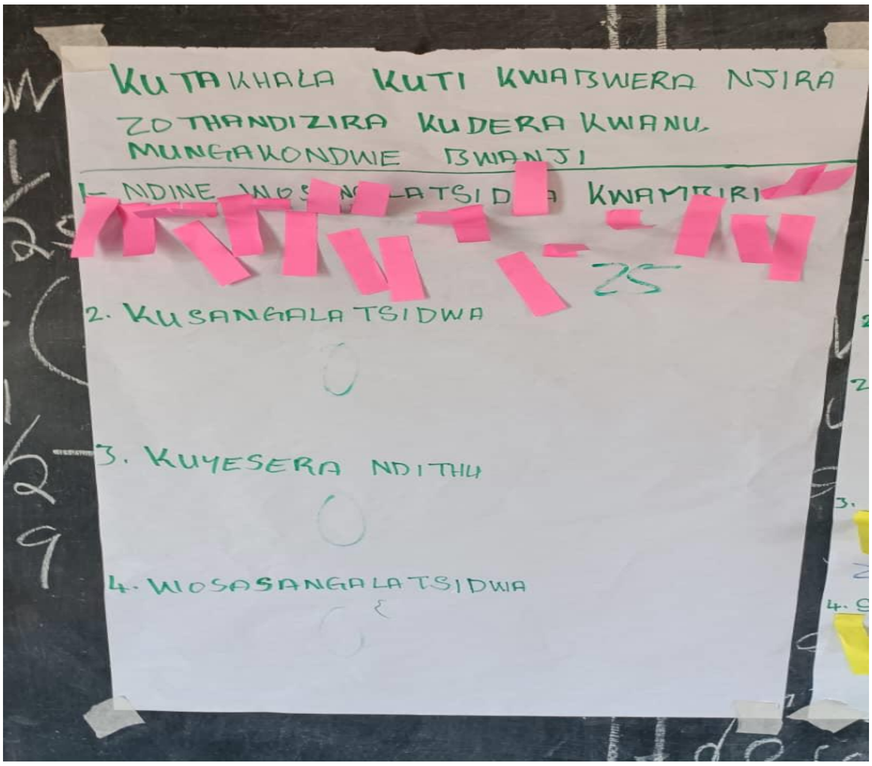
Bundled with seed/fertilizer (24%): A significant portion of farmers (24%) favors bundling insurance with seed or fertilizer purchases. This suggests an inclination towards integrated solutions that complement their primary farming activities.

From insurance company (14%): A notable but smaller percentage prefers directly purchasing insurance from insurance companies. This highlights a segment of farmers who are comfortable with traditional insurance channels.

Bundled with Agricultural loan (6%): A small percentage sees the benefit of bundling insurance with agricultural loans. This indicates an understanding of the interconnected nature of financial products in the agricultural context.

Insights and opportunities for insurance development:

Cooperative-Centric Strategies: Given the widespread preference for cooperatives, insurance providers can explore partnerships with these organizations to streamline the distribution of insurance products.



Integrated Solutions: Farmers' interest in bundling insurance with seed or fertilizer presents an opportunity for insurance companies to collaborate with agricultural input suppliers for integrated offerings.

Direct Marketing: For regions where farmers prefer purchasing directly from insurance companies, targeted marketing and awareness campaigns can enhance visibility and trust.

Tailored Approaches: Recognizing regional variations is crucial. Tailoring insurance products and distribution strategies to align with local preferences can enhance adoption.

Education and Awareness: Addressing the relatively lower preference for direct purchase from insurance companies may require educational initiatives to build awareness about the benefits of this approach.

In conclusion, understanding farmers' preferences provides a roadmap for insurance product development and strategic partnerships. By aligning with cooperative structures, bundling with essential inputs, and considering regional nuances, insurance providers can enhance accessibility and acceptance of agricultural insurance products among farmers.

7.10. Willingness to take-up agriculture insurance

The findings from FGDs indicate a positive disposition toward agricultural insurance, with many farmers acknowledging its role in risk mitigation. However, affordability remains a key challenge due to low rural income levels, with an estimated monthly income of US$16.25 per household. Farmers primarily generate income from subsistence food crop farming, which does not always provide sufficient cash flow for premium payments at the start of the season.

Nevertheless, experiences from past insurance programs suggest that when structured appropriately, smallholder farmers can and will pay for insurance. For example:

- The R4 Rural Resilience Initiative required a farmer contribution of Malawi Kwacha 13,510, which was deemed affordable by participants.
- Other farmers interviewed expressed willingness to pay between MK40,000 to MK100,000 per year, provided they understand the product offering.
- Farmers emphasized the need for education and transparent pricing structures before committing.

This suggests that while willingness is high, affordability constraints exist, necessitating structured financing models, such as seasonal payments or government co-financing.

7.11. Inclination to participate in the scheme

Participants in the focus group discussions showcased a keen interest in embracing agricultural insurance, recognizing its pivotal role in effective risk management. Despite this enthusiasm, their decision-making process is nuanced and influenced by various factors. Of particular note is the prominence of cost considerations, with participants expressing a genuine interest while seeking more detailed information on pricing structures. This underscores the importance of transparent communication on the financial aspects of insurance to align with the participants' expectations.

Beyond cost, concerns regarding potential limitations and conditions impacting insurance benefits emerged as significant considerations. Participants raised valid questions about the inclusivity of insurance coverage, expressing uncertainties about the availability of suitable insurance options for all participants. A subset of participants, driven by a desire for clarity, hesitates to contribute without a comprehensive understanding of the intricate terms and conditions governing insurance benefits. Their concern revolves around the fear of being excluded from the advantages of insurance, highlighting the need for clear and accessible communication on policy details.

Notably, there were voiced apprehensions about the potential increased scrutiny of farming practices due to insurance participation. This brings to light a critical aspect of the participants' mindset, emphasizing the importance of addressing perceptions and dispelling concerns related to privacy and interference. Moreover, participants articulated a desire for flexibility in their insurance contributions, emphasizing the need for customization based on their unique circumstances and varying yield sizes. This request for adaptability reflects the diversity of participants' situations and underscores the importance of tailoring insurance offerings to accommodate the specific needs of individual farmers.

In summary, while participants express a strong inclination towards agricultural insurance, their considerations go beyond mere interest. Factors such as cost, clarity on terms and conditions, concerns about inclusivity, apprehensions about scrutiny, and the call for flexible contributions collectively highlight the intricate landscape of participant expectations. Recognizing and addressing these nuanced considerations is crucial for designing insurance solutions that align with the diverse needs and preferences of small-scale farmers, ultimately fostering greater trust and uptake within the agricultural community.

> *"I understand that everyone will contribute according to what they farm. For example, if you farm ten acres, you can't be on the same level as someone farming just one acre. This is because if the person with one acre experiences a loss, it will be smaller than the loss you would incur. You can't contribute equally with them."* **Maize Farmer in Kasungu, Malawi**

> *"I am ready to pay Mk50,000. "*
> *"As a small-scale farmer, I can afford Mk70,000."*
> *"I am willing to participate in the insurance, but I have my conditions, and I also wish to be supported in paying for inputs."*
> **Different participants on readiness to participate in the scheme**

7.12. Amount willing to pay

The farmers expressed their willingness to participate in agricultural insurance and discussed their readiness to contribute financially. While specific monetary figures were not conclusive, there was a consensus that the amount would depend on the type of insurance plan and the education provided. The farmers emphasized the need for education to understand the insurance options available to them.

> *"I think I would be willing to pay mK50,000 per year but they need to first tell us about the products"* ***Rice Farmer, Karonga***
>
> *"…Mk100,000 per year for my two acres of land but you need to first tell us about the products and they benefit."* ***Maize Farmer, Kasungu***
>
> *"It is hard to tell, I fist need to know about that insurance…."* ***Farmer, Machinga***
>
> *"May be 50,000 per year…"* ***Farmer, Blantyre***
>
> *"…for me about Mk40,000 per year but I fist want to understand what I am paying for."* ***Maize Farmer, Salima***

Take-outs:

Tailored education programs: Farmers highlighted the importance of education before committing to insurance plans. This indicates an opportunity for insurance providers to develop tailored education programs to inform farmers about different insurance options, coverage, and associated costs.

Flexible insurance plans: The responses indicated that farmers are open to contributing based on a percentage of their expected income. This suggests an opportunity for insurance products with flexible payment structures, allowing farmers to tailor their contributions according to their specific financial situations.

Seasonal payment considerations: Since farming is seasonal, farmers mentioned the need for insurance plans that align with their specific farming seasons. Insurance providers can develop plans with seasonal payment options to accommodate the income patterns of farmers.

Trust in local authorities: Farmers expressed trust in local authorities, especially agricultural officers, to oversee the insurance plans. This highlights the importance of involving trusted community figures in the implementation and management of agricultural insurance schemes.

Convenient payment methods: Farmers favored online and mobile wallet payment methods, citing concerns about potential mismanagement if payments were handled by individuals. Insurance providers should consider offering convenient and secure digital payment options to enhance accessibility and transparency.

Community-based approach: The preference for the agricultural office as a registration point indicates the potential success of a community-based approach. Insurance providers can collaborate with local offices and agricultural officers to facilitate the enrollment process at the community level.

In summary, the insights from the discussions emphasize the importance of farmer education, flexibility in insurance plans, community trust, and convenient payment methods. Addressing these aspects can contribute to the successful development and uptake of agricultural insurance products tailored to the needs of farmers in different regions.

7.13. Preferred payment mode

Findings reveal payment through agricultural cooperative as the more preferred payment option for agriculture insurance.
Agricultural cooperative: Overall, 54% preferred payment through cooperatives. This was highest preference in Machinga and Karonga. The majority of small-scale farmers favor obtaining agriculture insurance through agricultural cooperatives, indicating the significance of cooperative structures as preferred channels. This underscores the potential for insurers to collaborate with cooperatives to enhance accessibility.

Table 7: What is the best approach to purchase agricultural insurance products?

	Overall	Blantyre	Machinga	Lilongwe	Salima	Kasungu	Karonga
Base	**224**	**45**	**43**	**20**	**46**	**27**	**43**
From insurance company	**14%**	0%	2%	10%	20%	30%	26%
Bundled with seed/ fertilizer	**24%**	73%	14%	0%	4%	41%	5%
From agricultural cooperative	**54%**	24%	74%	75%	72%	22%	58%
Bundled with agricultural (crop) loan	**6%**	2%	9%	5%	4%	7%	9%
Others	**1%**	0%	0%	10%	0%	0%	2%

Bundled with Seed/Fertilizer: Overall preference was 24%. Most prominent in Blantyre and Kasungu. This highlights the appeal of integrated solutions and collaborative efforts between insurers and input suppliers in these regions.

From Insurance Company (14%): Low overall, with notable interest in Salima, Kasungu and Karonga. Direct payment to the insurance company is less favored overall, with varying levels of interest across districts.

Bundled with Agricultural (Crop) Loan (6%): Slightly higher preference in Karonga and Machinga. While a smaller percentage, some farmers express interest in obtaining insurance bundled with agricultural loans, especially in Karonga and Machinga. This indicates a potential synergy between insurance and credit services in certain regions.
In conclusion, the strong preference for obtaining insurance through agricultural cooperatives suggests a strategic opportunity for insurers to collaborate with these entities, leveraging existing networks for widespread coverage. The popularity of bundled solutions with seed/fertilizer or agricultural loans indicates a potential avenue for insurers to explore partnerships with input suppliers and financial institutions to enhance accessibility. While direct payment to insurance companies is less favored overall, the interest in Karonga and Machinga suggests potential markets that insurers can target with tailored marketing strategies. Regional variations emphasize the importance of tailoring marketing and distribution strategies based on the specific preferences and needs of farmers in each area. In summary, understanding and adapting to the diverse preferences revealed in this data can significantly inform the design and implementation of effective payment methods for agriculture insurance products, ultimately contributing to increased adoption among small-scale farmers.

> *"From what I understand, if indeed there is an enabling insurance, we will form groups and select leaders. Among these leaders, they will be responsible for overseeing our project within the group"*

- *Rice farmer in Karonga*
-

7.14. Stakeholder trust and anticipated benefits

Majority of the farmers preferred involvement of local leaders in managing the scheme because they had more trust in them.

Some farmers emphasized the need for internal decision-making and self-evaluation in choosing leaders to manage the insurance program. The idea is to have leaders within the farmers' group who can address issues as they arise.

Trust is placed in the group's ability to self-regulate and manage the program without external interference, particularly from the government. There is a concern about the government channeling funds away from the intended purposes.

Autonomy and skepticism towards government involvement: Most farmers had preference for the scheme to operate independently and only considering government registration without interference suggests skepticism towards government involvement. This skepticism is rooted in a perceived lack of transparency and accountability in past experiences.

Gradual development and local empowerment: The idea of gradual development is highlighted, suggesting that consistent engagement and support will lead to the Scheme's natural progression. The mention of approaching the farmers with the chairman of the ward indicates a belief in local leadership and community-driven initiatives. Historical reference to funds provided to wards in the past, without clear benefits, indicates a cautious approach and a desire for tangible outcomes through group-based initiatives.

Anticipated benefits of Insurance:
Some farmers in the FGDs mentioned key benefit of insurance being the upliftment during times of income challenges. The perception is that insurance can provide financial support, depending on the income earned. Other farmers acknowledged the challenges they face, highlighting the unpredictability of farming. The presence of insurance is seen as a mitigating factor in managing unexpected expenses, thereby contributing to overall well-being.

The discussion showcases a clear preference for local empowerment and autonomy in managing the insurance program. Trust is placed in internal leadership, and skepticism towards government involvement stems from past experiences. The anticipated benefits of insurance, such as financial upliftment during income challenges, align with the practical considerations of the farming community. The focus on specific requests for agricultural inputs emphasizes the immediate and tangible needs that farmers believe will contribute to their overall well-being. The success of any insurance program would depend on addressing these local concerns and building trust through transparent and community-driven initiatives.

7.15. Commonalities across Crops:

Agricultural Challenges: Pests, diseases, and adverse weather conditions were prevalent challenges across the five crops. Pest Infestation has been the primary challenge in the sorghum and millets fields. These pests are identified as a significant threat to the crops, leading to damage and reduced yields, emphasized that when these pests are present in large numbers, they cause considerable damage to the sorghum fields, thereby affecting the overall harvest negatively also mentioned.

Rainfall Variability: Farmers pointed out the impact of rainfall on maize, soya and rice cultivation. Mentioned while good rainfall helps to grow healthy crops the absence or inadequacy of rainfall results in poor yields, ultimately leading to food shortages and hunger. Because of the struggles and difficulties for farmers, in securing enough food to meet their needs.

Table 8 Severity and Frequency of Occurrence of Risks

Risk Factor	Severity (High/Medium/Low)	Frequency (Frequent/Occasional/Rare)
Pests (e.g., mice)	High	Frequent
Unpredictable Rain	High	Frequent
Lack of Pesticide Knowledge	Medium	Occasional
Bird Threats (Beans)	High	Occasional
Low Rainfall (Rice)	High	Frequent
Lack of Modern Farming Equipment	Medium	Occasional
Wind (Sorghum)	Medium	Occasional
Monkey Threats (Maize)	High	Occasional

This table shows the diversity in risk factors affecting crop production across regions, varying in both severity and frequency.

1. **Pests (e.g., mice)**

Severity: High | **Frequency:** Frequent
The high severity and frequent occurrence of pest-related challenges, such as mice, underscore the constant threat to crops. Implementing robust pest management strategies is crucial for safeguarding agricultural yields and minimizing losses.

2. **Unpredictable rain**

Severity: High | **Frequency:** Frequent
High severity and frequent unpredictable rainfall pose a significant risk to crop cultivation. Small-scale farmers need adaptive farming practices and water management strategies to mitigate the impact of erratic weather patterns.

3. **Low rainfall (Rice):**

Severity: High | **Frequency:** Frequent
The combination of high severity and frequent occurrence of low rainfall presents a substantial risk to rice cultivation. Sustainable water management practices, drought-resistant crop varieties, and early warning systems may be essential for resilience in rice farming.

4. **Monkey Threats (Maize):**

Severity: High | **Frequency:** Occasional
Maize faces occasional but high-severity threats from monkeys. While not frequent, the potential impact on maize crops during specific periods calls for protective measures to mitigate losses.

5. **Bird Threats (Beans):**

Severity: High | **Frequency:** Occasional
Beans face occasional but high-severity threats from birds. This suggests the need for protective measures during critical phases of bean cultivation to prevent significant crop damage.

6. **Lack of modern farming equipment:**

Severity: Medium | **Frequency:** Occasional
The occasional lack of modern farming equipment indicates a moderate but sporadic challenge. Encouraging the adoption of modern agricultural practices and equipment can enhance efficiency and productivity during critical farming activities.

7. **Wind (Sorghum):**

Severity: Medium | **Frequency:** Occasional
Sorghum faces occasional threats from wind. While not frequent, the severity emphasizes the importance of addressing wind-related risks, potentially through the use of windbreaks or resilient sorghum varieties.

8. **Lack of pesticide knowledge**:

Severity: Medium | **Frequency:** Occasional
The occasional lack of pesticide knowledge suggests a need for targeted education and training programs. Enhancing farmers' knowledge on pesticide use can contribute to better pest management practices.

Overall observations: Given the high severity and frequent occurrence of pest-related challenges, implementing integrated pest management strategies is critical for sustained crop protection. The high severity of unpredictable and low rainfall highlights the vulnerability to climate-related risks. Promoting climate-resilient farming practices and technologies is essential for adapting to changing weather patterns. High-severity threats from monkeys and birds call for localized protective measures during specific crop stages to minimize losses. In addition, encouraging the adoption of modern farming equipment and practices can enhance efficiency and productivity, particularly during occasional challenges. Addressing the occasional lack of pesticide knowledge emphasizes the need for targeted education programs to empower farmers with the necessary skills for effective pest management. In summary, a comprehensive and adaptive approach to risk management, encompassing pest control, climate resilience, protective measures, and education, is crucial for building the resilience of small-scale farmers in Malawi. Understanding the severity and frequency of specific risks provides actionable insights for designing tailored interventions to mitigate the impact of these challenges.

7.16. Differences across Crops

Crop-specific Challenges: Each crop faces unique challenges; these challenges have been repeatedly observed across regions.

Maize (monkey threats); Maize crops face significant threats from persistent monkey raids, resulting in extensive damage and substantial yield losses.

Opportunity: Introduce agriculture insurance covering damage from wildlife, specifically tailored to protect maize crops. This would alleviate the financial burden on farmers, ensuring compensation for losses caused by monkey attacks.

Soya (bird and pest issues); Beans confront challenges from birds and pests, leading to damage and loss of crops.
Opportunity: Design insurance policies that address losses attributed to bird-related and pest challenges. Compensation mechanisms can help farmers recover from bean crop losses, providing financial security.

Rice (Empty Paddy): Rice cultivation faces the issue of "mphwepwa," resulting in empty paddy husks without actual rice grains during harvest.
Opportunity: Introduce insurance coverage specifically addressing "mphwepwa" challenges. Compensation for losses caused by factors such as inadequate pollination, fertilization, pest damage, or environmental stressors would safeguard rice farmers' incomes.

7.17. Insights

Tailored Coverage: Agriculture insurance solutions need to be intricately tailored to address crop-specific challenges faced by small-scale farmers. Promote awareness among farmers about the benefits of agriculture insurance, emphasizing how tailored coverage can alleviate financial risks associated with specific crop challenges. Encourage government support and partnerships to make agriculture insurance more accessible and affordable for small-scale farmers. Involve agricultural experts in the design of insurance policies to ensure they accurately reflect the risks faced by farmers and provide practical solutions for their unique challenges.

Diverse Farming Practices: Farming practices varied across crops, including planting frequency, farm size, and crop mixing.

Maize

- Crop Rotation: Maize farming practices often include crop rotation. Farmers alternate maize with other crops to maintain soil fertility and reduce the risk of soil depletion.

- Planting Frequency: Maize is typically planted during the primary growing season, which coincides with the rainy season in Malawi. Some farmers opt for multiple plantings during this season to ensure a continuous maize supply.
- Farm Size: The farm size dedicated to maize cultivation varies, from small-scale farmers with less than 2 acres to medium 3 to 5 acres, the main focus for Small-scale farmers is on subsistence farming, and while medium they contribute to commercial maize production although it is at low levels.

Rice

- Water-Intensive Farming: Rice is known for its water-intensive cultivation. Malawian rice farming often involves lowland paddies where fields are flooded, requiring an intricate irrigation system. This has been the practice in all the regions we have done the Focus Groups Discussion, and whenever there is no rain the amount of loss becomes extreme.
- Planting Frequency: Rice fields are generally planted during the main rainy season, with some variations depending on local climate and the availability of water resources.
- Farm Size: Rice farming can vary from small-scale paddy fields maintained by individual households to medium rice farms managed by groups, particularly in regions with ample access to water resources

Peas (Groundnuts and Soya beans)

- Intercropping: Peas are often intercropped with other staple crops like maize, creating a more diversified farming system that enhances soil fertility.
- Planting Frequency: Bean planting generally aligns with the rainy season, and the frequency varies based on the specific region and growing conditions.
- Farm Size: Bean farming practices can range from small family gardens to larger plots. They are commonly found in various farming systems due to their nutritional value.

These diverse farming practices reflect the adaptability of Malawian farmers to their local conditions, available resources, and specific crop requirements. Crop choice, planting times, and farm sizes can significantly differ from one region to another, highlighting the importance of understanding the local context in agriculture insurance.

7.18. Community Needs:

Financial Concerns: Farmers expressed financial concerns related to the cost of farming, uncertainty about receiving services after payment, and the desire for trustworthy insurance providers, farmers provided valuable insights into their perceptions and expectations. Here are more details on these financial concerns:

- **Cost of farming:** Farmers expressed concerns about the overall financial burden of farming. They highlighted the costs associated with inputs such as seeds, fertilizers, pesticides, and labor. Additionally, the cost of modern farming equipment and technology was a significant consideration. Some farmers may lack the financial resources to invest in these inputs, which can impact their agricultural productivity. Consequently, they see agricultural insurance as a means to mitigate the financial risks associated with farming.

- **Uncertainty about receiving services after payment:** Some farmers expressed apprehension about making payments for agricultural insurance without a clear understanding of what services and benefits they would receive in return. This uncertainty could deter them from participating in insurance schemes. Farmers desire transparency in the services provided by insurance companies, including the coverage, claims process, and the conditions under which compensation will be provided.
    - **Desire for trustworthy insurance providers:** Farmers emphasized the need for trustworthy and reliable insurance providers. They want to be assured that the insurance company will deliver on its promises, especially in the event of crop losses or other agricultural risks. A lack of trust in insurance providers can discourage farmers from participating in insurance schemes. Building trust through transparent and fair practices is crucial for the success of agricultural insurance programs.

These financial concerns point to the importance of addressing the economic challenges that small-scale farmers face. To promote agricultural insurance adoption, it is essential to provide clear and accessible information about insurance products, their costs, and the benefits they offer. The providers' commitments are critical for gaining farmers' trust and encouraging their participation in such schemes.

- **Fair Compensation:** The need for fair compensation, whether based on capabilities, land size, or region, was a consistent concern.

- **Compensation based on capabilities:** Farmers stressed the importance of compensation that reflects their capabilities and efforts in agriculture. They believe that compensation should consider their farming skills, the inputs they use, and the strategies they employ. Some farmers may invest more time, labor, and expertise in their farms, leading to higher expectations of compensation in the event of crop losses. Fair compensation based on capabilities is perceived as a recognition of their hard work and dedication.

- **Compensation based on land size:** The size of the farmland was another factor considered when discussing fair compensation. Farmers with larger land holdings may expect higher compensation due to the increased scale of their agricultural operations. Conversely, those with smaller land holdings may anticipate proportional compensation based on their production capacity. The equitable distribution of compensation, irrespective of land size, is a key concern for farmers to ensure that smaller-scale farmers are not disadvantaged.

- **Regional fairness:** Farmers also expressed the desire for regional fairness in compensation. This means that compensation should consider the specific challenges and advantages of farming in different regions. For example, regions with higher susceptibility to certain risks like pests or erratic weather patterns should receive compensation that reflects the unique challenges they face. Ensuring regional fairness acknowledges that not all farmers face the same level of risk and promotes equity.

- **Transparency in compensation calculation:** In addition to fair compensation, farmers emphasized the need for transparency in how compensation amounts are calculated. They want to understand the criteria used to determine compensation, such as the extent of crop loss, the market value of the crops, and the coverage of the insurance policy. Transparent compensation calculations help farmers trust the insurance process and reduce disputes.

Addressing the concern for fair compensation is vital in designing an equitable agricultural insurance scheme. Farmers expect compensation that is commensurate with their contributions, the size of their farms, and the unique challenges they face in their regions. Ensuring that compensation policies are transparent and considerate of various factors will contribute to the success and acceptance of agricultural insurance programs among small-scale farmers.

Governance and oversight: The importance of governance and oversight in the insurance process was emphasized. The feasibility study of Agricultural Insurance revealed a dual perspective on governance and oversight. While the importance of effective governance and oversight in the insurance process was underscored, there was also skepticism regarding local government leaders' ability to manage the program. Here are additional insights into this topic:

Importance of Governance and Oversight:

- **Transparency and Accountability**: Participants recognized that effective governance and oversight mechanisms are essential for ensuring transparency and accountability in the management of agricultural insurance programs. They emphasized the need for clear processes, fair treatment, and adherence to established rules and regulations.
- **Consumer Protection**: Farmers highlighted the importance of governance and oversight in safeguarding their interests. Proper oversight helps protect farmers from unfair practices, ensuring that the insurance program is designed to benefit them in times of need.
- **Trust and Credibility**: Strong governance and oversight contribute to the trust and credibility of the insurance program. When farmers have confidence that their contributions are managed transparently and fairly, they are more likely to participate.

Skepticism Regarding Local Government Leaders:

- **Desire for Independent Oversight**: To address these concerns, some farmers suggested the need for independent oversight or external audit mechanisms. They believed that involving trusted, non-partisan entities in the governance and oversight of the program would enhance its credibility and effectiveness.

- **Transparency and Communication**: Open communication and transparency were key aspects mentioned to build trust in local government leaders' ability to manage the program. Farmers stressed that local leaders should provide clear information about program operations and financial management.
- **Community Involvement**: Some participants also expressed the idea that the farming community itself should have a role in oversight. They believed that farmer representatives or committees could play a crucial part in ensuring governance and accountability.

While governance and oversight were recognized as vital components of agricultural insurance, concerns about local government leaders' management capabilities highlighted the need for transparency, accountability, and independent monitoring. Establishing effective governance and oversight structures, along with community involvement, can help address these concerns and build trust in the insurance program. This, in turn, can encourage greater participation and support from the farming community.

7.19. Opportunities

- **Localized trust and engagement:** Local leaders, including community figures and representatives, are pivotal in building trust. Opportunities lie in leveraging these trusted individuals to facilitate the acceptance and promotion of agriculture insurance within communities.
- **Decentralized decision-making:** Farmers express a preference for decentralized decision-making, advocating for the selection of leaders within their groups. This presents an opportunity to empower local communities, enhance accountability, and foster a sense of ownership in managing insurance programs.
- **Transparent implementation and conflict resolution:** Transparent implementation processes and efficient conflict resolution mechanisms are essential. Addressing concerns related to conflicts and ensuring transparent operations can significantly contribute to building and maintaining trust among farmers.
- **Continuous education and awareness:** Continuous education and awareness campaigns are crucial for bridging the knowledge gap. Opportunities lie in developing sustained programs to educate farmers about the benefits and intricacies of agriculture insurance, fostering a better understanding of the concept.
- **Practical support and tangible benefits:** Integrating practical support such as seeds, fertilizers, and pesticides into insurance programs provides tangible benefits to farmers. Opportunities exist to enhance the appeal of insurance by directly contributing to improved farming practices and outcomes.
- **Collaboration with local government:** While there is skepticism about direct government involvement, collaboration with local government structures presents an opportunity for better coordination, improved credibility, and aligning insurance programs with broader development goals.
- **Incentivizing cooperative participation:** Cooperative participation is seen as a motivator for increased farming income. Opportunities exist to emphasize and incentivize

cooperative involvement, showcasing how it contributes to overall farming success and income growth.

Opportunities for agriculture insurance and climate risk financing are embedded in building localized trust, transparent implementations, continuous education, and practical support. Collaboration with local leaders and governments, along with a focus on climate-resilient practices, can significantly enhance the effectiveness and acceptance of agriculture insurance initiatives.

8. GOVERNMENT INITIATIVES

Malawi has been implementing various government initiatives to promote and improve the agriculture sector at different stages of implementation. Some of the initiatives include:

Fertilizer Subsidy Programs: The government has implemented various fertilizer subsidy programs to make fertilizers more affordable for farmers. These programs aim to increase soil fertility and improve crop yields while reducing the input costs.
The subsidy on fertilizer has been implemented across the country and for all value chains. The Government has provided the subsidy at 50% of the total cost and the farmer pays the remaining 50%. The farmers accessing the subsidy can easily be made to pay for the insurance as it will be more beneficial in case risks occur.

Research and Extension Services: The government supports agricultural research and extension services to provide farmers with improved technologies, best practices, and knowledge on crop management, pest control, and other aspects of farming. From the 2019-2020 census, 6.9% of the crop growing households indicated having received government extension services. The extension services can be used as one of the strategies for consumer awareness and education.

Rural Infrastructure Development: The government invests in rural infrastructure, including roads and storage facilities, to facilitate the transportation of agricultural products and reduce post-harvest losses.

Youth and Women Empowerment in Agriculture: There are initiatives to encourage youth and women to engage in agriculture by providing training, access to credit, and other support mechanisms.

Agricultural Marketing Initiatives: Efforts have been made to improve market access for farmers, including the establishment of market information systems and the promotion of farmer cooperatives.

The Government has also waived any related Taxes to agriculture activities or tools.

9. INTERACTION WITH DIFFERENT STAKEHOLDERS

Malawi has a small but dynamic insurance market comprised of eight non-life companies and five life companies that are regulated and supervised by the Reserve Bank of Malawi (RBM). The gross written premium of the Malawi insurance market was MWK174.8 billion ($151.2 million) in 2023. The market is expected to achieve a compound annual growth rate (CAGR) of more than 15% during 2024-2028[1].

The industry has also expanded to include microinsurance products aimed at reaching the low-income population, which remains largely underserved. There are, however, no regulations for agricultural and index-based insurance products. Several agricultural insurance products have been approved on an ad hoc basis since 2005, but lack of internal capacity related to agricultural insurance is a constraint of the regulator.

Challenges and Opportunities

Challenges:

- **Low Penetration Rates:** The insurance penetration rate in Malawi is relatively low, estimated at less than 2% of GDP. This is partly due to low-income levels, lack of awareness, and limited access to insurance services, particularly in rural areas.
- **Market Fragmentation:** The market is fragmented, with a few dominant players and several smaller companies, leading to intense competition.
- **Regulatory and Economic Challenges:** The industry faces challenges such as economic instability, inflation, and regulatory changes that can impact profitability and growth.

Opportunities:

- **Growth Potential:** With a young and growing population, there is significant potential for growth in life insurance and other long-term savings products.
- **Microinsurance:** The development of microinsurance products provides an opportunity to reach the vast underserved rural population.
- **Digital Innovation:** The use of digital platforms for distributing insurance products and managing claims offers opportunities to reduce costs and increase penetration.

[1] **Malawi Insurance Market Report Overview, January 2024**

9.1. The Insurance sector in Malawi

Malawi's agricultural sector faces numerous challenges, including erratic weather patterns, droughts, floods, pests, diseases, and climate change. These risks create substantial income volatility for farmers, reduce agricultural productivity, and contribute to food insecurity. Traditional coping mechanisms, such as selling assets, reducing food consumption, or taking on debt, have limited effectiveness and can lead to a cycle of poverty.

Agricultural insurance emerged in Malawi to mitigate these risks, offering farmers a safety net against the uncertainties of climate-related events. The concept was introduced in the early 2000s, largely driven by international organizations, donors, and development partners, including the World Bank, United Nations Development Program (UNDP), and various Non-Governmental Organizations (NGOs).
During the study, two insurance companies were visited: CIC Insurance and NICO General Insurance. Both insurance companies are providing the agriculture insurance product for both commercial and smallholder farmers.

9.2. **Regulatory framework for agricultural insurance**

9.2.1. Insurance legislation and regulation

The Government of Malawi has substantially reformed the regulation and suspension of the financial sector in Malawi in recent years. The Government has introduced several financial sector laws, including laws covering the insurance, pensions, banking, microfinance, and financial cooperative sectors. The key umbrella law for the financial sector in the Financial Services Act, No. 26 of 2010, enacted in July 2010. This law consolidates all supervisory powers with the governor of the Reserve Bank of Malawi in the appointed role of Registrar of Financial Institutions. The insurance Act, 2009, No. 9 of 2010, gives a framework in terms of how the insurance sector is regulated; a significant number of directives have been issued to give the necessary regulatory detail for the insurance sector in general (AXCO information services, 2018).

There is no specific regulation exists for agricultural and index-based insurance products. An inclusive insurance directive was issued in July 2019, many of the aspects addressed in the inclusive insurance directive also apply for agricultural insurance.

The new inclusive insurance directive addresses gaps related to micro-insurance products in general but does not make reference to agricultural micro-insurance, in particular index-based insurance solutions. Reserve Bank of Malawi currently considers agricultural insurance under the miscellaneous line of business.

Several agricultural insurance products have been approved on an ad hoc basis by Reserve Bank of Malawi since 2005. As for any new insurance product launched, the insurers must file the product details with Reserve Bank of Malawi. The risk carrier may expect the answer and approval from Reserve Bank of Malawi within three (3) to four weeks (4).

The filing should include the policy document as well as:

- Technical note detailing the distribution mechanism,
- Reinsurance arrangements,
- Pricing and its assumptions,
- Financial projections supporting the sustainability and solvency of the product,
- Policy and informational documents.

9.2.2. Insurance supervision

Supervision of the insurance industry is the responsibility of the Reserve Bank of Malawi – day to day supervision of the industry is dealt with by the Pension and insurance Supervision Department, which was created to deal with, among other sectors, insurance, pension, and medical aid schemes (AXCO, 2018).

The Reserve Bank of Malawi in its capacity as the insurance supervisory body does get involved in the resolution of insurance industry consumer disputes from time to time. The legal department is used to review policyholder complaints.

9.2.3. Reinsurance for agriculture

According to the regulator, the retention level for general insurance is satisfactory since there is no current limitation on retention level.

There is no restriction on the operation of foreign reinsurers, and the market is active despite the small size of the insurance industry. The market prohibits the fronting by insurers and reinsurers unless an exemption is made. Essentially, local insurance risks must be circulated on a slip around the market to exhaust local capacity prior to external capacity being sought. The slip is then submitted to the regulator for approval (AXCO, 2028).

Access to reinsurance for new agricultural insurance schemes can be a problem. Most of the big agriculture insurance accounts in the country are reinsured by Africa re, Hannover re or Swiss re, while a small share is retained in the country by insurers itself.

9.3. Experience of Agricultural Crop Insurance

Malawi has gained a wealth of experience on agricultural insurance in last 20 years. Still, the agricultural production that is currently insured is less than 1% (approximately 0.89%) of the agricultural GDP. Most of general insurers have been engaged in the agricultural sector, and covering different crops (maize, tobacco, soya, rice and oilseeds) under different agricultural insurance programs such as:

- In 2005, the world bank supported a pilot program in Malawi to determine if index-based weather insurance would be a useful tool for managing agricultural risks. Whereas the traditional multiple peril crop insurance had been tried unsuccessfully on a small scale in

Malawi. The pilot project was implemented together with the National Association of Small Farmers (NASFAM), which works with farmers to develop marketing channels for the value-added goods and encourages its member farmers to invest in higher return activities. To add on this, provision of insurance was linked to credit provision and access to quality of inputs. The crop insurance contract was designed in close collaboration with farmers' groups, local insurers, and reinsurers. The project was initially operated in four areas which Lilongwe, Kasungu, Nkhotakota and Mchinji. This project has reached a maximum of 2,600 insured farmers.

- **Multi-peril crop insurance for tobacco farmers** – this product (also called Mtetezi) has been developed by NICO Insurance that is offered to both large- and small-scale tobacco farmers. The product was protecting farmers from loss or damage to the crop as result of hall, windstorm, floods, and excessive rainfall, and damage caused while tobacco is in transit to the auction floor[2]. The product was mainly distributed through the National Bank of Malawi, as it was easier to sell the product bundled with loans. The interest rate and insurance premium of the bundled loan-insurance product comes at a cost of 25% to 30%. By making use of the bank as the main distribution channel, NICO was able to reach 11,000 farmer clubs that have usually 10 members or more. The sum insured per club was in the range of USD 1,000 to 10,000 and the value of the portfolio was standing at Malawian Kwacha 8 billion (US dollars 53,3 million).

- **Drought index insurance as part of the R4 Rural Resilience initiative** – this program was implemented by World Food Program in 2015, Insurance of Assets scheme as part of the R4 initiative was aiming at increasing resilience of farmers through risk reduction, risk transfer and prudent risk taking. The scheme has grown to 37,000 farmers in four years.

- **Monsanto Germination Insurance** – the consortium of insurers headed by the Insurance Association of Malawi entered a partnership with the seed supplier Monsanto Malawi Ltd. The project has been ensuring 242,000 bags of 5 kgs seed bags valued at US Dollars 1.8 million.[3] Linking insurance to provision of agricultural inputs was providing opportunities to reach large numbers of farmers.

- **Index insurance for oilseed farmers** – this product was covering the smallholder cotton farmers.

- **Group multi-peril crop insurance for soya bean farmers** – Vision Fund has been implementing an integrated value chain development approaching soya bean farmers on which crop insurance was included. This product was piloted in partnership with NICO Insurance, SEEDCO Malawi Ltd as provider of inputs and Mount Meru Millers Ltd as off-takers of the produce. The insurance was provided to the members of the cooperatives as a group insurance linked to loans.

[2] This information was provided by Mr. Donbell Mandala, the CEO of NICO during our interaction.
[3] This information was provided by Mr. Donbell Mandala, the CEO of NICO during our interaction

- **Mthangati Insurance for maize and soya farmers** – this product was offered by CIC Insurance Africa Malawi, Farmers' Union of Malawi, and Malawi Union of Savings and Credit Cooperatives. Mainly, the product was covering drought for maize and soya farmers[4].

The livelihoods of majority of rural households that depend on agriculture are threatened by a broad range of risks. Income levels in Malawi remain low, especially in rural areas, which limits households' ability to pay for insurance. As per the focus group discussion with the farmers, the low demand for insurance is partly due to low levels of financial literacy and insurance awareness among themselves.

As future projection, the agricultural insurance does not yet play an important role in the way most farmers manage their production risks. The key challenge is to design an agricultural insurance scheme that can reach a majority of farmers, especially those subsistence and semi-commercial farmers of food crops that currently have few options to protect their crops from severe drought and pests.

9.4. SWOT analysis for agricultural insurance in Malawi

Strengths: • Natural demand for agricultural insurance products (Agriculture contributes around 30% to the GDP) • Government support – there are more initiatives and policies promoting the agricultural insurance products. • Engagement of local insurance companies in agricultural insurance towards market expansion • Experience with agricultural insurance for small scale farming • Diversified insurance product range on the market.	**Weaknesses:** • Low insurance penetration due to the high premiums and lack of understanding of insurance policies. • Lack of skills and knowledge related to agricultural insurance • Low product development capacity within insurance companies • Weak data infrastructure
Opportunities: • Integration into climate risk financing framework for Malawi and Government support • Linkage to agriculture sector development and value chain projects • Linkage to agricultural inputs and/or credit • Insurance product innovation	**Threats:** • Natural disaster – mainly drought, flood and pests • Economic constraints – to support agricultural insurance • Informal risk-sharing systems through community groups at village level.

[4] CIC Insurance Africa Malawi Ltd

9.5. Meeting with Commercial Banks

During our filed visit on the supply side interactions, we have met with National Bank of Malawi and centenary Bank Limited which are really supporting the agriculture sector, which is crucial for the country's economy, especially as climate change poses increasing risks.

Banks in Malawi are increasingly supporting climate-resilient agricultural practices by offering climate-smart agriculture loans. These loans target farming techniques that enhance productivity while minimizing environmental damage.

Malawi's banking sector, in collaboration with insurance companies, has developed weather-based crop insurance products. These insurance schemes protect farmers from losses caused by extreme weather events such as droughts or floods, which are becoming more frequent due to climate change. Banks facilitate access to these products as part of agricultural loans, reducing the risk for both the bank and the farmer. The Banks have highlighted that they are partnering with agricultural technology platforms and mobile-based solutions to offer farmers tools for climate-smart farming which will give farmers access to weather forecasts, market information, and agricultural advice. These partnerships will be helping farmers to plan better and reduce the risks associated with climate unpredictability.

Financial institutions especially Banks are increasingly offering training and advisory services for farmers, often in partnership with different stakeholders. This helps farmers understand how to adopt new practices that reduce climate risk, such as water-saving techniques, soil health management, and diversifying crops to build resilience against climate extremes.

Along with microfinance institutions, the commercial banks provide financial support to smallholder farmers, who are most vulnerable to climate change. By making credit accessible to these farmers, banks help them invest in improved seeds, tools, and technology that can mitigate the risks posed by climate variability. They are also implementing some initiatives through Women and Youth lending projects.

The commercial banks have recommended that it will be good thing to embed the crop insurance to the existing inputs program which will solve some of the challenges that they are facing related to their agricultural products that they are offering to the clients in terms of climate change risks and market prices fluctuation. They have also highlighted that they wish to have it as a package which responds to farmers needs such as:

- Climate change risks
- Lack of knowledge – product awareness
- Product affordability – cost of insurance (premium wise)
- High interest loan which is around 35.5% (25.4% normal bank interest rate and 10.1% cost of insurance)

The banks also suggested that the crop insurance should be bundled with personal accident insurance and introduce a cover for loan recovery default.

we have understood that banks are stepping up their role in supporting agriculture by promoting climate-smart practices, providing different insurances and partnering with agri-tech companies. These efforts are essential in building resilience among farmers and combating the adverse effects of climate change on agriculture.

9.6. Meeting with Micro finance institutions

Microfinance institutions (MFIs) in Malawi play a pivotal role in supporting agriculture and helping smallholder farmers manage the risks associated with climate change. Considering that agriculture is the backbone of Malawi's economy and that most the farmers are smallholders, MFIs have tailored their products and services to build resilience in the agricultural sector.

9.6.1. CUMO Microfinance Limited

This microfinance is one of the largest microfinance institutions in Malawi, established with a focus on providing financial services to low-income individuals and communities, particularly in rural areas. CUMO, which stands for Community Microfinance, has a strong social mission to alleviate poverty and promote economic empowerment by offering financial products tailored to the underserved.

During our visit to one of the microfinance institutions (CUMO Microfinance), the Chief Executive Office – Mr. Ezekiel has highlighted that the MFIs are supporting agriculture sector in terms of providing financial products to vulnerable farmers in rural areas through facilitation of savings, loan lending and teaching them about business – entrepreneurs for on-farm and off-farm activities.

This microfinance has a portfolio of 90,000 clients (here to note that they started in year 2000 with 100 clients only) and they have provided more than Malawian Kwacha 700 million in 2023 as loans to their clients to be able to purchase the inputs. Yes, they don't have agriculture insurance, but the loans provided are recovered individually through the group solidarity created for insurance purposes.

Jointly with World Food Program (WFP), CUMO have implemented weather index crop insurance for their farmers/client in year 2016 which did not sustain due to the product conflict raised during the claim's payout. However, they have changed the product type to area yield index crop insurance in year 2018 which also has an issue of getting an expert for crop cutting experiments (CCE). The premium was subsidized by WFP for some part and the farmer was paying the remaining part depending on the available grant.

Under the agriculture insurance implementation, CUMO has counted some challenges:

- Lack of skills during the claim' payout – no CCE Expert

- Delays in farming (delay of seeds and fertilizers)
- Misdistribution of inputs under inputs program – farmers buy inputs for selling not for using)
- Lack of risk assessment – it has highlighted that the insurers have been insuring known claims.
- Sustainability of the project
- Insurance product affordability – high cost of insurance.

CUMO has embraced the idea of embedding the crop insurance into the existing affordable inputs program since it will eliminate the issue of access to finance for farmers and increase the farmers' production. However, they have suggested that the product should be designed as a package and include the personal accidents and funeral covers if applicable.

9.6.2. Cooperatives Savings and Investment Program – COMSIP

The COMSIP is a community-based organization, by interacting with the Finance manager at the head office, he highlighted that the COMSIP is focused on promoting savings investment, and financial inclusion among low-income individuals, particularly in rural areas. It operates as a cooperative that helps its members improve their livelihoods through access to financial services, skill development, and economic empowerment initiatives.

The Manager has highlighted some key activities that the cooperative is currently doing to their beneficiaries:

- **Capacity building and training;** they offer training on financial literacy, entrepreneurship, business management, and cooperative governance. The goal is to equip members with the skills needed to manage their finances and businesses effectively.

- **Mobilization on savings;** the cooperative organizes its members into groups or cooperatives where they can pool savings. These savings provide members with a sense of financial security and a foundation for future investments.

- Social protection support; the manager informed that the cooperative has been integrated with Malawi's social protection programs, to help beneficiaries of social cash transfers save and invest a portion of their earnings for long-term benefits.

- **Group lending,** the project promotes the group-based lending where members can guarantee each other's loans which reduce the individual risk. This group solidarity approach strengthens the overall financial standing of members.

Considering their contribution to the agriculture activities for their beneficiaries, the COMSIP facilitate in accessing the microloans, enabling them to purchase seeds, fertilizers, equipment and other necessary inputs for their farming activities. These loans are often provided at low interest rates, making them accessible even to smallholder farmers.

The cooperative also promotes climate-smart agricultural practices by training farmers on sustainable farming techniques, including conservation agriculture, organic farming, and crop diversification. These practices help increase productivity while safeguarding the environment.

Discussing on the building resilience to climate change, the Manager said that the Cooperative helps farmers building resilience against climate-related risks, such as droughts or floods, to ensure that they can recover quickly from natural disasters and continue farming by improving farmers' financial stability and promoting savings.

The management emphasized that implementing crop insurance for their beneficiaries/farmers will be a good idea since it will address many climate-related challenges. Crop insurance would protect farmers' investments, especially in the face of extreme weather events like the severe drought experienced in the 2023/2024 season. By providing financial security, crop insurance would help farmers recover from losses due to climate risks, ensuring they can sustain their livelihoods and continue agricultural activities even in adverse conditions.

9.7. Meeting with Farmer's Unions and Associations

9.7.1. Farmers Union of Malawi (FUM)

The Farmers Union of Malawi is the largest and most prominent farmer's organization in Malawi. During our visit to FUM, the Head of Agri-business has highlighted that FUM has been created with key objectives such as: Advocate for pro-farmer policies, Promote the adoption of modern agricultural practices, assist farmers access financial services (loans and insurance) and Promote farmer participation in local and international markets. It focuses on empowering smallholder farmers, who make up most of the agricultural workforce in Malawi.

FUM has more than 1,500,000 member/farmers and they operate across the country under all districts where they have secretariat of Union. Related to agriculture insurance, they informed that they have some commercial farmers who have taken insurance for their crops (tobacco and maize) while seeking loans from financial institutions.

The Head of Agri-business has said that the Union is facing some challenges of:

- Delays in farming activities due to the late delivery of agricultural inputs which is significantly impacting crop productivity and overall farm performance,
- Lack of effective communication and timely sharing of weather information which poses significant challenges to farmers.

However, the FUM has begun addressing the issue by sharing weather information and crop calendars through group meetings and member training sessions. This initiative will help to ensure that farmers are better informed about upcoming weather patterns and optimal farming practices, enabling them to plan their activities more effectively. By delivering this information directly through organized group settings, the Union enhances communication, fosters collective learning, and supports timely decision-making, ultimately improving productivity and resilience to weather-related challenges.

Through unions, cooperatives, associations and individuals; the management of FUM has highlighted that they are playing a big role in advancing the agricultural sector by representing farmers' interests, providing services that enhance productivity, and advocating for policies that support sustainable farming. Its activities in training, advocacy, market linkages, and climate resilience are vital to improving the livelihoods of smallholder farmers and ensuring food security in Malawi.

The management insisted that once the crop insurance scheme is embedded in the existing inputs program that should be implemented through cooperatives or farmers' unions rather than directly to individual farmers. This approach ensures that the distribution and use of inputs are better monitored and managed collectively, minimizing the risk of farmers selling the inputs instead of using them to boost productivity. By leveraging cooperatives or unions, the program can promote accountability, ensure inputs are used as intended, and strengthen group oversight, thereby enhancing overall agricultural outcomes and safeguarding productivity.

9.7.2. Malawi Federation of Cooperatives Ltd – MAFECO

During our visit at MAFECO, the Executive Director highlighted that the federation is a member-based organization which was established to serve as an umbrella body for all registered cooperatives in Malawi. It was created with the goal of improving coordination, representation, and support for cooperatives in different sectors of the economy.

The Federation is coordinating quiet number of cooperatives which are involved in the agriculture activities, the Director said that they have some members who are involved in agriculture businesses of coffee, maize, rice, soya beans and groundnuts across the country.

The management said that the federation is mostly focusing on the following activities:

- **Coordination of Cooperative Development:** the federation coordinates efforts to establish and strengthen cooperatives in different regions of Malawi, ensuring that they are properly registered and aligned with cooperative principles.

- **Training and Education:** The federation provides the cooperatives with training on cooperative governance, business management, financial literacy, and entrepreneurship towards the efficiently and sustainably of their businesses.

- **Advocacy for Policy Reforms:** The federation engages with the government to advocate for policies that are favorable to cooperatives. This includes reforms in areas such as taxation, regulation, and access to finance, which directly affect cooperative businesses.

- **Promoting Cooperative Values:** The federation promotes the cooperative values of self-help, democracy, equality, equity, and solidarity. These values are essential for building strong, member-driven organizations that serve the interests of their communities.

The management said that the federation is currently collaborating with the government on improving extension planning areas and linking cooperatives with input service providers to ensure the delivery of high-quality agricultural inputs. This partnership aims to enhance the effectiveness of agricultural activities by ensuring that cooperatives have access to reliable, top-quality inputs, which will ultimately improve productivity and support sustainable farming practices across member cooperatives.

However, the federation through their members continues several challenges:

- **Climate change risks,** particularly prolonged droughts, which having significant losses in agricultural production.
- **Delays in the supply of inputs**, which disrupt crop calendar and affect overall farm productivity.
- **Delays in timely payment** for inputs under the Affordable Inputs Program.

The management has emphasized that, given the challenges the federation faces under the inputs program, embedding crop insurance within the program through cooperatives would streamline its management. By integrating crop insurance into the cooperatives' structure, it would be easier to administer, providing a safeguard for farmers against climate-related risks and ensuring protection for their investments. This approach would help mitigate the impacts of unpredictable weather conditions, like droughts, while improving the overall effectiveness and resilience of the inputs program.

9.8. Meeting with Ministry of Agriculture and Food security

Malawi's agricultural sector has historically been the main contributor to the economy, employing about 80% of the population and contributing around 30% to the Gross Domestic Product (GDP). As a result, the Ministry of Agriculture and Food Security has been pivotal in shaping policies to enhance food security, increase agricultural productivity, and promote sustainable farming practices.

During our visit to the Ministry of Agriculture and Food Security, we have been honored to meet with the Permanent Secretary who highlighted that the Ministry plays a central role in the country's economic development, given that agriculture is the backbone of Malawi's economy. She emphasized that the ministry's mandate is to promote agricultural productivity, ensure food security, and improve the livelihoods of smallholder farmers through policy formulation, technical support, and resource allocation.

The Ministry collaborates with various departments, parastatals, and research institutions to improve agricultural productivity, promote market access, and enhance value addition to agricultural products. It is also in responsible for developing and implementing agricultural policies, regulations, and programs that address national food security, climate change resilience, and agricultural innovation.

Among the key initiatives that the Ministry have in place, the affordable Inputs Program (AIP) is one of the Ministry's flagship initiatives. It aims to provide smallholder farmers with access to subsidized agricultural inputs, such as seeds and fertilizers, to improve productivity and ensure food security at the household level. This program has replaced the earlier Farm Input Subsidy Program (FISP), expanding to include more beneficiaries and targeting the most vulnerable populations.

The crop department The Crop Department has been recognized as a reliable source for all data and information related to the agriculture sector, particularly within the crop section. However, the department has highlighted that one of its main challenges is the growing threat of climate change. These risks, including unpredictable weather patterns, prolonged droughts, and floods, significantly impact crop production and pose a serious threat to the sustainability of agriculture in the region. Addressing these climate-related challenges remains a key priority for the department.

The crop department staff emphasized that they have implemented initiatives to combat climate change risks, including promoting the planting of various crops and plants that are resilient and can withstand the impacts of climate change. These efforts aim to enhance agricultural sustainability by introducing climate-tolerant crop varieties that can thrive despite harsh environmental conditions, ensuring continued productivity and food security for farmers in the face of increasing climate variability.

We have learnt that crop department collaborates with the Meteorological Department to enhance agricultural planning, decision-making, and productivity by addressing climate-related challenges. Their partnership is essential in ensuring that farmers are better equipped to adapt to changing weather patterns and mitigate the effects of climate variability.

The key areas of collaboration include:

- **Weather forecasting and dissemination of information** - providing timely weather forecasts and seasonal climate predictions, and in turn, the crop department disseminates the shared weather information to farmers through extension services, cooperatives, and agricultural meetings, ensuring that farmers can make informed decisions on when to plant, irrigate, or harvest based on expected weather conditions.

- **Development of climate -smart agricultural practices** – promoting climate-smart agricultural practices that help farmers adapt to climate change.

- **Early warning systems** – jointly they develop and implement early warning systems for extreme weather events such as climate changes (droughts and floods). These systems alert farmers to upcoming weather threats, allowing them to take preventive measures, such as reinforcing irrigation systems or adjusting planting times.

- **Agro-meteorological data sharing** – collection of agro-meteorological data, which includes information on temperature, rainfall patterns, humidity, and soil moisture levels. This data is shared with the Crop Department, helping in the development of crop models and guiding agricultural policies.

  For the crop department, this data is used to advise farmers on suitable crops for specific regions, considering local climate conditions, and to recommend farming practices that maximize yields in varying weather conditions.

- **Training and capacity building** - both departments work together to train agricultural extension officers and farmers on interpreting weather data and using it to improve farming decisions. This includes educating farmers on how to read weather forecasts, understand seasonal climate outlooks, and adopt farming practices that align with predicted weather patterns.

Normally, the crop department uses meteorological data to contribute to policy discussions on agricultural adaptation to climate change, ensuring that policy frameworks support the adoption of climate-smart agriculture.

To fight climate change risks, the crop department has some initiatives in place such as:

- Climate change adaptation and resilience,
- Rainwater harvesting,
- Forestation - planting more trees,
- Promotion of crops that sustain for drought.

Partnering with the existing inputs program, the Crop Department emphasized its role in helping the program assess the quality of inputs and identify value chains to support. This process is carried out at the district level, where the department ensures that only high-quality seeds, fertilizers, and other agricultural inputs are distributed to farmers.

Since the existing inputs program operates under the Ministry of Agriculture and Food Security, where the Crop Department is located, it will present a significant opportunity to benefit farmers and boost agricultural production. The Crop Department has suggested that the program be delivered as a comprehensive package, integrating high-quality inputs, crop insurance, and other support services.

They emphasize that effective management at the implementation level is critical to ensure farmers receive timely access to the resources they need, ultimately increasing productivity and profitability in the agricultural sector.

9.9. Meeting with Inputs Service Providers

The Inputs service providers in Malawi play a big part in supporting agriculture, which is the backbone of the country's economy. These providers are essential in delivering agricultural inputs such as seeds, fertilizers, pesticides, and agricultural equipment to farmers, helping to improve productivity and ensure food security.

While visiting various inputs providers, they revealed that they have been actively partnering with the government in implementing key agricultural input programs in Malawi. One notable example is their involvement in the **Farm Input Subsidy Program (FISP)**, which aimed to improve food security and agricultural productivity by providing smallholder farmers with subsidized seeds and fertilizers.

However, FISP was eventually replaced by the **Affordable Inputs Program (AIP)**, a similar initiative designed to continue offering critical agricultural inputs at subsidized prices to small-scale farmers. This program has been implemented up to the present day, with input providers playing a crucial role in the distribution and supply of seeds, fertilizers, and other necessary materials under these government schemes. Their partnership with the government has been essential in reaching rural farmers and improving crop yields across the country.

9.9.1. RAB Processors Ltd

Founded in 1983, it is a prominent agribusiness company in the country. It has grown to become one of the key players in the Malawian agricultural sector.

Initially focused on trading agricultural commodities, RAB Processors has since expanded its portfolio to include a wide range of agricultural inputs, agro-processing, and distribution services. Its operations encompass the procurement, processing, and marketing of various agricultural products such as maize, beans, rice, and other grains.

The company operates through several subsidiaries and brands, engaging in areas like food processing, logistics, and distribution. It also offers services such as warehousing and storage facilities, providing comprehensive support to farmers and the agriculture industry at large. RAB Processors Ltd works closely with smallholder farmers, providing access to markets, inputs, and services to improve agricultural productivity and income generation.

Related to their contribution to the government inputs program, the General Manager has highlighted that RAB Processors plays a significant role in this program by participating in distribution of the essential inputs.

We have noted various activities that RAB Processors contributes under Affordable inputs program (AIP) such as:

- Distribution of Agricultural Inputs – by supplying the fertilizers and seeds, the company utilizes its extensive distribution network across Malawi to ensure that smallholder farmers can access inputs at affordable prices, even in remote areas.

- Partnership with Government - The company works in partnership with the Malawian government to streamline the logistics and supply chain of the inputs. This partnership helps to improve the efficiency of the program, ensuring that inputs are delivered on time and reach the intended beneficiaries.

- Quality Assurance – the company ensures the quality of agricultural inputs such as fertilizers and seeds, contributing to the success of the AIP in improving crop yields and overall food security.

- Capacity building and support – apart from distributing inputs, the company often engages in capacity-building initiatives aimed at educating farmers on proper input utilization, farming techniques, and best agricultural practices to maximize the benefits of the AIP.

Currently while distributing the inputs, RAB Processors faces several notable challenges that affect the efficiency and success of its operations:

- **Delay in providing inputs** – sometimes these delays are due to the logistical inefficiencies, supply chain disruptions or bureaucratic hurdles within the AIP framework.

- **Poor collaboration with the Affordable Inputs Program (AIP)** – the company is facing issues related to the poor coordination.

- **Local currency depreciation against importation currencies** - The depreciation of Malawi's local currency (the Kwacha) against major importation currencies such as the US Dollar and the South African Rand presents a significant financial challenge for RAB Processors, this is threatening the affordability of inputs for farmers, even under the subsidy program.

- **Fixed Input Prices Across the Country Affecting Transport Costs** - The AIP fixes the price of inputs like fertilizers and seeds uniformly across the country. However, this pricing policy does not account for the varying transportation costs incurred in distributing these inputs to different regions. For RAB Processors, the cost of transporting inputs to remote or hard-to-reach areas is often much higher, yet the company is unable to adjust prices to cover these additional expenses. This fixed pricing model strains the company's operational budget and reduces profitability, especially in regions that are logistically challenging to service.

RAB Processors Ltd has embraced the idea of embedding crop insurance into Malawi's Affordable Inputs Program (AIP) as a way to mitigate risks for smallholder farmers. However, they are proposing a unique approach to ensure the efficient management and implementation of this insurance initiative. The company suggests introducing the crop insurance by grouping farmers into clusters of 10 to 15 per group. This model aims to streamline various aspects of the program, including payment collection, monitoring, and proper utilization of inputs

9.9.2. Seed Co Ltd

Seed Co Ltd is one of Africa's largest and most prominent seed companies, with operations across several countries, including Malawi. It was founded in Zimbabwe in 1940 and has since grown to become a leader in the development and distribution of hybrid seeds across the continent. Seed Co specializes in the breeding, production, and marketing of certified crop seeds, focusing on key staples like maize, soybeans, wheat, sorghum, and vegetables.

During our visit to the company, the marketing Manager for Seed Co Ltd in Malawi has highlighted that the company's primary focus is on providing high-quality, high-yield hybrid seeds tailored to local conditions, helping to improve agricultural productivity and food security. The company operates through an extensive distribution network, working closely with agro-dealers and government programs to reach smallholder farmers.

Seed Co Ltd operates over 12 retail shops across the country and partners with various agro-dealers to effectively meet the needs of farmers nationwide. These agro-dealers serve as crucial distribution points, ensuring that farmers in remote areas can access high-quality seeds and agricultural inputs. Their widespread network plays a vital role in providing timely and localized support to farmers.

Under the Affordable Inputs Program (AIP), these agro-dealers are instrumental in facilitating the distribution of subsidized seeds and inputs to smallholder farmers.

The manager explained that Seed Co Ltd signs a contract with the government to serve as an inputs service provider under the Affordable Inputs Program (AIP). Following this, the company also enters into agreements with agro-dealers, covering both the distribution of inputs and financial arrangements, including payment terms.

The company primarily supplies seeds for crops such as rice, maize, soybeans, and sugar, focusing on rural areas where the majority of farmers are located. By targeting these regions, Seed Co ensures that smallholder farmers, who form the backbone of Malawi's agricultural sector, have access to high-quality seeds to boost productivity and improve food security.

The Manager highlighted that Seed Co Ltd is the leading provider of seeds in terms of volume per season. In the 2023/2024 season, the company supplied around 3,300 metric tons of seeds across various value chains, serving approximately 660,000 farmers.

The challenges

Seed Co Ltd provides a variety of high-quality seeds, with a focus on hybrid and improved varieties that are suited to Malawi's agricultural conditions.

The management highlighted several challenges the company is currently facing:

- **Slow movement of hybrid seeds:** Hybrid seeds are staying in storage for extended periods, indicating slow uptake by farmers.

- **Occasional unavailability of hybrid seeds:** There are instances where hybrid seeds are not readily available, leading to disruptions in supply.

- **Farmer resistance to new seed technologies:** Many farmers are reluctant to adopt new and improved seed varieties, preferring traditional seeds over hybrid options.

- **Affordability:** Despite government subsidies, hybrid seeds remain expensive for many smallholder farmers, making them difficult to afford, which affects overall sales and distribution.

The Initiatives

For the upcoming season, the company has proposed some initiatives to address current challenges and improve operations:

- **Flexible Payment Plan:** Introducing a payment plan that allows farmers to pay for seeds in advance of at least six months, making it easier for them to afford the inputs.

- **Enhanced Digital Payment System:** Upgrading the digital payment system to streamline transactions and extend access to more farmers, improving efficiency and convenience.

- **Engagement with Government at District Level for EPES**: Strengthening collaboration with district-level government authorities to enhance the implementation of the Electronic Payment and Exchange System (EPES), ensuring smoother operations in the Affordable Inputs Program (AIP).

- **Capacity Building for Model Farmers:** Training for selected model farmers who will, in turn, train others in their communities. These model farmers will be rewarded with free seeds, incentivizing them to grow their businesses while promoting the use of improved seed technologies.

These initiatives aim to enhance access to seeds, improve payment systems, and encourage greater adoption of new agricultural technologies.

From quality control perspective, the company employs a digital system that enhances traceability and ensures seed authenticity. Each bag of seeds features a tag with a QR code containing a hidden number. This code provides detailed information about the company and the specific seed batch when scanned. This system helps maintain product quality, ensures transparency, and protects farmers from counterfeit seeds, ensuring they receive certified, high-quality seeds from Seed Co Ltd.

Seed Co Ltd supports the introduction of crop insurance as part of the Affordable Inputs Program (AIP). However, they have recommended that the cost of the insurance be aligned with the cost of agricultural inputs and incorporated into the government subsidy. This would help to ensure that the insurance remains affordable for farmers, allowing them to benefit from both the inputs and the financial protection.

9.10. Meeting with Affordable Inputs Program (AIP)

Agriculture is the backbone of Malawi's economy, contributing around 30% of the GDP and employing over 80% of the population. However, many farmers in Malawi are smallholders who struggle with access to quality inputs such as fertilizers, improved seeds, and agrochemicals.

While interacting with the AIP Program Manager, he highlighted that the Government of Malawi introduced Affordable Inputs Programme (AIP) whose implementation commenced in July 2020. The program concentrates on supplying fertilizer, cereal seed (maize, rice, sorghum) or livestock (female goats) to targeted productive farming households.

Normally, the AIP was introduced to address challenges observed under FISP, including inefficiency, high costs, and a lack of transparency. The main objective of AIP is to ensure that more farmers have access to high-quality inputs at subsidized rates, thereby boosting productivity and increasing household food security.

Through the AIP, the Government, in collaboration with private inputs suppliers, distributes subsidized fertilizers and seeds to the households. These inputs are distributed through a voucher system, where farmers pay a subsidized price to the inputs suppliers through their agro-dealers operating across the country, with the government covering the remainder.

The Program Manager, said that despite the success story, the program has faced some challenges including logistical difficulties in inputs distribution, budget overruns and delays. He added that there is a concern about the long-term sustainability of the program.

For the upcoming season 2024/2025, the program is targeting about 1.5 million productive farmers in the country of which 1,490,250 will be targeted for crop production and 9,750 for goat production. The program has set the criteria for define the productive farmer as follows:

- Has access to land of about 0.4 hectares
- Ready to contribute more to fertilizer on the commercial market
- Belongs to a farmer organization
- Does not receive support from other programmes/ projects
- No history of selling farm inputs support
- Is a citizen of the community [5]

9.10.1. Procedure of identifying the beneficiary

There is no single data set that could define productive farmers as stipulated above. Each data set fall short of one or more attributes. Addressing to this, the Ministry through technical support from Presidential Delivery Unit (PDU) specifically Tony Blair Institute (TBI); harmonized the available four data sets to come up with one data set. Despite this, there were still some gaps observed that needed to be filled in and the data needed to be validated by field officers before selecting productive farmers as per above definition. The ICT section therefore developed an application to facilitate updating and validation of the harmonized data set.

The productive farmers will be selected from the validated farming household register based on the above stipulated criteria. For the first time this season, beneficiaries will be identified based on constituency they below Final beneficiary registers have to be distributed as stated above by end June 2023.

Under this upcoming season 2024/2025, the inputs to be accessed by beneficiaries will be like a starter pack where a farmer is encouraged to add more or supplement with other organic manure making technologies such as Mbeya fertilizer so that more land is covered without necessarily compromising on production.

Therefore, each targeted household will access one 50kg bag of Urea, one 50kg bag of 23:10:5+6S+1.0Zn. This will translate to 149,025MT of fertilizer (74,512.5MT of NPK and 74,512.5MT of Urea) to be supplied to beneficiaries. Similarly, each household will access 5kg of maize seed which means that the total seed that is required is 7,451.25mt. In summary, the package per crop beneficiary will be as follows:

- 1 bag of UREA weighing 50kg
- 1 bag of NPK weighing 50kg
- 5kgs of maize seed [6]

The targeted beneficiaries will be expected to contribute to the cost of fertilizers and distribution costs. The approved amounts will be as follows:

- MK15,000 per one 50kg Urea bag
- MK15,000 per one 50kg NPK bag

[5] Affordable Inputs Programme (AIP) 2023/2024 Implementation Guidelines
[6] Affordable Inputs Programme (AIP) 2023/2024 Implementation Guidelines

- For seed, government has contributed MK3,500 per each 5kg seed pack. Farmers will be topping up the difference which will be varying based on type and variety of the seed preferred by the beneficiary.[7]

9.10.2. Payment using digital system – E – AIP

The Program Manager said that the E-AIP (Electronic Affordable Inputs Program) is an upgraded version of the Affordable Inputs Program, designed to address some of the inefficiencies and challenges that were present in earlier manual systems (coupons).
The AIP system (E-AIP) was introduced during the 2020/2021 farming season. It was developed and implemented to replace the use of coupons. Basically, the system was developed to improve the beneficiary selection, registration of beneficiaries, redeeming of inputs, payment to input suppliers, monitoring & evaluation and production of reports.[8]

The Component of E-AIP

During our discussion with the Program Manager, he highlighted that the E-AIP has different components:

- **Biometric Registration:** Farmers are registered using their national IDs and biometrics, creating a unique profile that ensures they receive the right inputs each season.
- **Mobile Technology:** Farmers receive digital vouchers via mobile phones, which they can use to redeem subsidized inputs.
- **Real-time Monitoring:** The government and implementing agencies can track the distribution of inputs in real-time, ensuring accountability and reducing delays.
- **Private Sector Engagement:** E-AIP facilitates greater collaboration with private agro-dealers, ensuring timely and efficient delivery of inputs.

9.10.3. Selection of Inputs Service Providers – AIP

The selection of input service providers under AIP involves a formalized process managed by the government through the Ministry of Agriculture and other relevant agencies. This process is aimed at ensuring that the right suppliers are chosen to provide farmers with high-quality agricultural inputs like fertilizers, seeds, and agrochemicals. The goal is to have a transparent, competitive process that ensures efficiency and accountability in the distribution of inputs.

The Program Manager has shared some key steps in the selection process,

- The Ministry of Agriculture and Food Security at the beginning of every season initiates the selection process by publishing a public tender. This is an open invitation for private sector companies, such as agro-dealers, input suppliers, and manufacturers, to bid for the opportunity to supply agricultural inputs under the AIP.

[7] Affordable Inputs Programme (AIP) 2023/2024 Implementation Guidelines
[8] Affordable Inputs Programme (AIP) 2023/2024 Implementation Guidelines

- The invitation to bid is often published in national newspapers, government websites, and other media platforms to ensure transparency and broad participation.

This tendering process happens before the start of every season.
The Program Manager emphasized that embedding crop insurance into the existing Affordable Inputs Program (AIP) is feasible, depending on the design of the crop insurance product. He recommended that the product should address the primary needs of farmers, particularly risks related to climate change, such as drought and excessive rainfall, as well as crop diseases.
He confirmed that AIP will support the implementation of the crop insurance if it is bundled in a similar manner to how the inputs program is currently supported.

9.11. Meeting with World Food Programme (WFP)

The World Food Programme plays a significant role in addressing food security and supporting agricultural development, with a focus on resilience building and poverty reduction.

The WFP has been partnering with the government of Malawi and the private sector to address chronic food insecurity, malnutrition, and the impacts of climate change. Malawi, being one of the most vulnerable countries to climate shocks, faces frequent droughts, floods, and erratic rainfall, which significantly affects smallholder farmers and food production. In response to these challenges, WFP's operations in Malawi have focused on food assistance, nutrition support, emergency relief, and resilience-building initiatives for vulnerable communities.

WFP contribution to agricultural crop insurance

During our visit at WFP, it was highlighted that one of the key initiatives of WFP is to improve the resilience of smallholder farmers in Malawi in terms of introduction and promotion of agricultural crop insurance programs. These efforts aim to safeguard farmers against climate-related risks such as drought and floods, which threaten agricultural productivity and food security.
WFP has been involved in agricultural insurance, including weather index insurance, to support farmers in Malawi. Initially, the program covered eight districts, but due to funding constraints, it has been scaled back to four districts. The initiative covers crops such as maize, rice, soybeans, and sorghum, benefiting more than 250 farmer organizations. This support aims to protect farmers from climate-related risks and enhance their resilience.

The WFP also supports the farmers and insurers through a variety of activities, including:

- Data collection
- Famer's mobilization
- Premium subsidy (farmer pays 50% and WFP pays 50%)
- Sensitization on how to calculate the premium and training payout
- Enrollment and registration

For the 2023/2024 season, WFP has allocated $1.8 million to support these activities, ensuring effective implementation and helping farmers mitigate climate-related risks.

Challenges

While implementing agricultural crop insurance, WFP faces several challenges such:

- Funding Constraints - One of the major challenges is insufficient funding, which has led to a reduction in the number of districts covered by the program. Initially spanning eight districts, the program was scaled down to four due to limited financial resources.

- Low Farmer Awareness and Understanding - Many smallholder farmers have limited knowledge and understanding of how crop insurance works, particularly weather index insurance. This creates difficulties in effectively mobilizing farmers and ensuring widespread adoption.

- Premium Affordability - Even with the premium subsidy (where farmers pay 50% and WFP pays the other 50%), many farmers still struggle to afford their portion of the insurance premium due to their low-income levels, affecting the overall uptake of the insurance product.

- Climate Uncertainty - While crop insurance aims to mitigate climate risks like drought and excessive rainfall, the increasing unpredictability of weather patterns due to climate change adds complexity to designing and implementing effective insurance products.

- Trust and Cultural Barriers - There is sometimes a lack of trust among farmers towards insurance programs, partly due to unfamiliarity with insurance concepts and previous experiences of delayed or inadequate payouts.

- Lack of Insurers' involvement in the agricultural insurance, WFP said that the insurance companies are behaving like brokers in terms of risk assessment and mobilization.

- Data Gaps - Accurate and timely data collection is critical for weather index insurance, as payouts depend on precise weather data. However, there are challenges with reliable data infrastructure and accessibility in some areas, which can hinder the effective implementation of the insurance product.

Due to the data gaps, WFP informed us that they have shifted the program from weather index insurance to area yield index insurance. This change is aimed at reducing conflicts during claims payouts, as area yield index insurance relies on actual crop yields in a defined area rather than weather data, making the payout process more transparent and less prone to disputes.

WFP Initiatives

WFP Malawi has undertaken several key initiatives to promote agricultural insurance as part of its broader efforts to build resilience among smallholder farmers. These initiatives aim to protect farmers from climate-related risks and improve food security. Among these initiatives we may highlight some:

- **Adaptation fund program** - Helps farmers adapt to climate change and protects their livelihoods through insurance and climate-smart practices.

- **School feeding program (home farming)** - promotes food security by sourcing food locally from smallholder farmers to feed schoolchildren. It ensures children have access to nutritious meals, which boosts school attendance and improves learning outcomes.

WFP has embraced the idea of embedding crop insurance into the existing Affordable Inputs Program by considering the following key factors:

- Political will – Government should be involved in the implementation of the scheme and should start at district level.
- Designing a good product that responds to the farmers' needs
- Affordable product in terms of insurance cost.
- Build agricultural capacity of insurance companies - this involves training on how insurance works, creating awareness of its benefits, and improving farmers' ability to access and utilize insurance products.

10. PROPOSED SOLUTIONS FOR AGRICULTURE RISK RESILIENCE INSURANCE ACCESS PROGRAM IN MALAWI

10.1. Rationale for a crop insurance program

The proposed crop insurance program aims to address the vulnerabilities and risks that smallholder farmers face, which are exacerbated by climate change and weather variability. By shifting from a heavy reliance on input subsidies to a more balanced approach that includes risk management tools, the government can enhance the resilience of the agricultural sector, improve food security, and promote sustainable economic growth.

Benefits of a Crop Insurance Program

- **Risk Mitigation** - Provides financial protection to farmers against losses due to adverse weather events and other agricultural risks, ensuring income stability.

- **Promote Sustainable Practices** - Encourages farmers to adopt climate-smart agriculture techniques and diversify crops, enhancing long-term productivity.

- **Fiscal Efficiency** - Potentially reduces the financial burden on the government by lowering the need for emergency relief funds following disasters.

- **Stimulates Private Sector Engagement** - Creates opportunities for private insurance companies to participate, fostering innovation and competitiveness in the agricultural sector.

- **Data-Driven Decision Making** - Facilitates the collection of agricultural data that can inform policy and improve resource allocation.

To mitigate agricultural risks, several insurance products have been developed globally. An actuarial review of these products in the context of Malawi's agricultural sector is as follows:

10.1.1. Named Perils Insurance

Named Peril Insurance provides coverage against losses caused by specific perils such as hail, fire, or frost. This type of insurance is straightforward, making it easy for farmers to understand the coverage and the circumstances under which claims can be made. When a named peril occurs, the claim assessment process is relatively simple since the cause of loss is clearly defined and verifiable.

This simplicity can expedite claim settlements and provide quick financial relief to affected farmers.

Limitations:

- Inapplicability to Multiple Risks: Malawi's farmers face a variety of risks including drought, floods, pests, and diseases. Focusing on specific perils leaves them vulnerable to events that are not covered by the policy.

- High Assessment Costs: This insurance requires individual farm assessments to verify losses, increasing administrative expenses and making it less practical for smallholder farmers spread over vast rural areas.

10.1.2. Multi-Peril Crop Insurance (MPCI)

Multi-Peril Crop Insurance offers comprehensive coverage against a wide range of risks, including adverse weather events, pests, and diseases. It provides extensive protection for farmers, ensuring that they are compensated for losses resulting from multiple perils that affect their crops. MPCI can bolster farmers' confidence to invest in better farming practices and inputs, knowing that they are protected against a variety of risks.

Limitations:

- Moral Hazard: Farmers may not implement risk-reducing practices, relying instead on the insurance payouts. This reliance can lead to increased risk-taking behaviors and a higher likelihood of losses.
- Adverse Selection: Farmers who are at higher risk of crop failure are more likely to purchase insurance, which can skew the risk pool and lead to higher premiums for all insured parties.
- High Administrative Costs: MPCI requires individual farm inspections and detailed loss assessments. These processes are costly and logistically challenging if the farmers to be covered are predominantly smallholder farmers, making it impractical and expensive to administer. The product is therefore usually distributed to large scale farmers.

10.1.3. Weather Index Insurance

Weather Index Insurance provides payouts based on specific weather indices, such as rainfall levels, rather than actual losses incurred by the farmer. This type of insurance uses objective, measurable data to trigger payouts, which reduces disputes over claims and speeds up the compensation process. By eliminating the need for individual loss assessments, it lowers administrative costs and simplifies the claims procedure.

Limitations:

- Basis Risk: There may be a weak correlation between the weather index and the actual losses experienced by farmers. This can lead to situations where farmers suffer losses but do not receive payouts because the index did not reach the trigger point, or they receive payouts without experiencing significant losses.

- Data Requirements: The effectiveness of Weather Index Insurance depends on the availability of reliable and granular weather data particularly from Automated Weather Stations. In many regions of Malawi, such data may be lacking or insufficiently precise, hindering accurate index calculation and fair compensation.

- Applicability: the product is only applicable where systemic risks that can be independently measured by available tools are available. The most common risks are drought, excessive rainfall, temperature and the likes. It cannot adequately cover risks such as frost, hail, fire, pests and disease attacks and so on which are usually mainly localized.

10.1.4. Area Yield Index Insurance

Area Yield Index Insurance provides payouts when the average yield of a defined Unit Area of Insurance (UAI), such as an Agricultural Development Division (ADD), falls below a predetermined threshold, regardless of individual farmers' yields. This type of insurance aligns well with systemic risks affecting overall yields in a region, such as droughts or widespread pest infestations. It reduces moral hazard and adverse selection because individual farmers cannot significantly influence area yields, and all farmers in the area are subject to the same conditions. Additionally, it is cost-effective, as it eliminates the need for individual farm assessments, thereby reducing administrative expenses. Malawi's availability of historical yield data at the ADD level facilitates accurate product design and pricing for Area Yield Index Insurance.

Limitations:

- Data Accuracy: The reliability of this insurance depends on accurate and timely reporting of area yields. Inaccurate data can lead to unfair payouts, either overcompensating or undercompensating farmers.

Summary of the Crop Insurance Cover Options:

	What is it?	Transaction Cost	Moral Hazard/ Adverse Selection	Basis Risk	Claims Settlement TAT
Multi-Peril Crop Insurance	A traditional indemnity insurance product against major perils. Payouts are determined through a farm level loss assessment process by a qualified loss assessor.	**High**	**Medium**	**Low**	**Medium**
Area yield index insurance	Is based on average losses at the regional level rather than farm level. The number of risks covered is almost comprehensive. It is often based on crop cutting experiments that are done on randomly selected farms in the unit area of insurance.	**Medium**	**Low**	**Medium**	**Medium**
Weather Index Insurance	Is based on weather parameters (such as rainfall, temperature, or soil moisture) correlated with farm level yields or revenue outcomes	**Low**	**Low**	**High**	**Low**
Basis risk with index insurance arises when indices are imperfectly correlated with farmers' losses and the resultant payout made. Some farmers with losses may not receive pay-outs while some farmers without losses may receive pay-outs					

Some of the disadvantages of Index based Crop Insurance -

- <u>**Basis risk**</u> - An insured individual farmer can experience a severe yield loss on his/her farm and not receive an indemnity if the area yield average is unaffected.

- <u>**Not suitable for localized perils**</u> **–** Index based insurance schemes will not work in areas with high losses due to localized perils, e.g. hail, strong wind, local flooding by river, etc. that only affect small areas or few farmers.

- <u>**Requirement of homogeneous Unit Areas of Insurance**</u> – Area Yield Index Insurance works best in a homogeneous climatic zone and where cropping systems for the insured crop are uniform (e.g. same soils, rainfall regime; same plant varieties, planting dates, similar management practices, etc.). Defining the Unit Area of Insurance (UAI) can be difficult. The policy is not suitable for mix up type of farming, e.g. relay-cropping, or seasonal cropping characterized by continuously staggered planting and harvest dates.

- **Accuracy of historical area yield data –** Any index insurance product requires accurate historical data to estimate the historical yield averages. During crop harvesting, accurate yield measurement through proper sampling and crop cutting are required. These can be time-consuming and prone to queries on the accuracy of the data used to determine payments. A good data auditing system is thus a key requirement. If the program being implemented is on a national scale then the cost of the crop cuts may be high.

	Product	Summary	Perils	Benefits	Challenges
TRADITIONAL PRODUCTS	**Named peril crop insurance**	- Risks covered are explicitly mentioned - Damage-based policy - Measure %ge damage in field - pre-agreed sums insured - Operated in private sector	- Main: hail, fire Other: frost, wind - Suited to localized, independently occurring, sudden perils - May include quality loss	- Simple policy - Limited farmer details needed at point of sale - Transparent loss assessment - Product experience is key - Manageable adverse selection and moral hazard	- Individual farmer loss assessment - Loss assessment cost in small farmer systems - Not suited to complex perils, especially drought and pest
	Multiple Peril Crop Insurance (MPCI)	- All perils, few exclusions - Yield-based policy - Measure harvested yield - Compare to a % of average yield - High cost, often requires subsidy	- A wide list of perils - Difficult to exclude perils, as causes of loss cannot be identified - Includes management influences	- More easily made into a "universal" product type - Limited technical adaptation required for different crops - Guarantees farmer production and income - Type of insurance farmers typically want and understand - Indemnifies each farmer according to yield	- Individual farmer loss assessment, - Major loss adjustment task, impartial loss adjustment difficult - Adverse selection risk - Moral hazard risk - Major work to set up yield history for each farmer, unreliable data - High premium and administrative cost
INDEX-BASED PRODUCTS	**Area yield index insurance**	- Farmers grouped into assigned areas - MPCI but on area average yield - All farmers in	- A wide list of perils covered - Difficult to exclude perils, as causes of loss cannot be uniquely	- No adverse selection, moral hazard, individual farmer loss adjustment - Low administrative costs - Can address	- Local perils (e.g., hail) will not result in payout - Yield history at local district level often not available or reliable

		area treated equally - Effective where similar exposures affect whole districts or geographical regions	identified - Occasionally includes some price risk in some markets	catastrophe perils affecting group - Enrollment of farmers is easy - Captures all causes of yield loss	- Basis risk at local level depending on district area and peril
	Product	**Summary**	**Perils**	**Benefits**	**Challenges**
	Weather Index Insurance (WII)	- Payouts based on weather station measurement - Index trigger, exit, increments set to expected loss of yield - Can be complex to design	- Main: rainfall deficit and excess; high, low, or prolonged temperatures - Other: high wind, sun	- No adverse selection, moral hazard, individual farmer loss adjustment - Can address catastrophe perils affecting group - Transparent, objective - Meteorological Service Data (MET) - Easier to reinsure	- Basis risk is key challenge - Setting up the index parameters is technically complex - Need good meteorological and agronomic data, crop modeling - Difficult to correlate damage for sudden-impact weather

10.2. The Business Case – Product Structure

Agriculture is the cornerstone of Malawi's economy, contributing over 30% to the Gross Domestic Product (GDP) and employing more than 80% of the population. Recognizing the sector's critical role, the Government of Malawi introduced the AIP with the goal of increasing access to agricultural inputs among smallholder farmers. By subsidizing fertilizers and improved seeds, the program aimed to boost crop yields, enhance food security at the household and national levels, and stimulate economic growth.

Maize and rice are staple crops critical for food security and household incomes. The Affordable Inputs Program (AIP) in Malawi, has been a pivotal intervention in supporting smallholder farmers better their production mechanisms. Despite its noble objectives, the AIP has faced significant challenges that have impeded its effectiveness and sustainability. This report synthesizes key findings from various reports and data analysis to inform a proposition for a government-led crop insurance program, focusing on Insurance as viable solutions to mitigate agricultural risks.

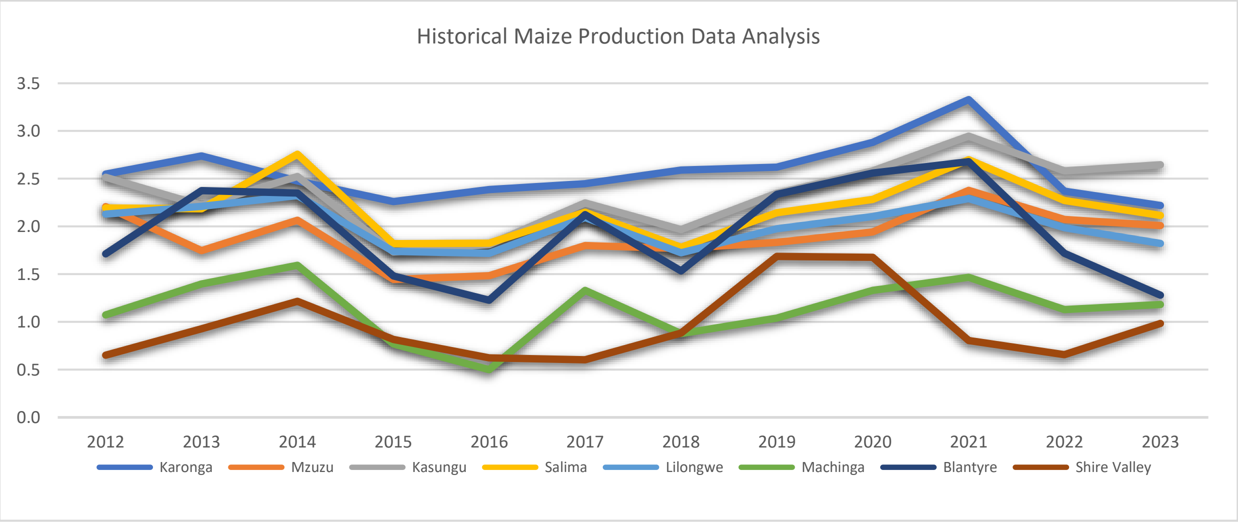
10.2.1. Actuarial Analysis of Agricultural Risks

Historical Yield Data Analysis

An examination of maize and rice yields from 2012 to 2023 across eight Agricultural Development Divisions (ADDs) reveals significant yield variability due to systemic risks such as droughts, floods, pests, and diseases.

Historical Maize Yield Variability (Metric Tons per Hectare)

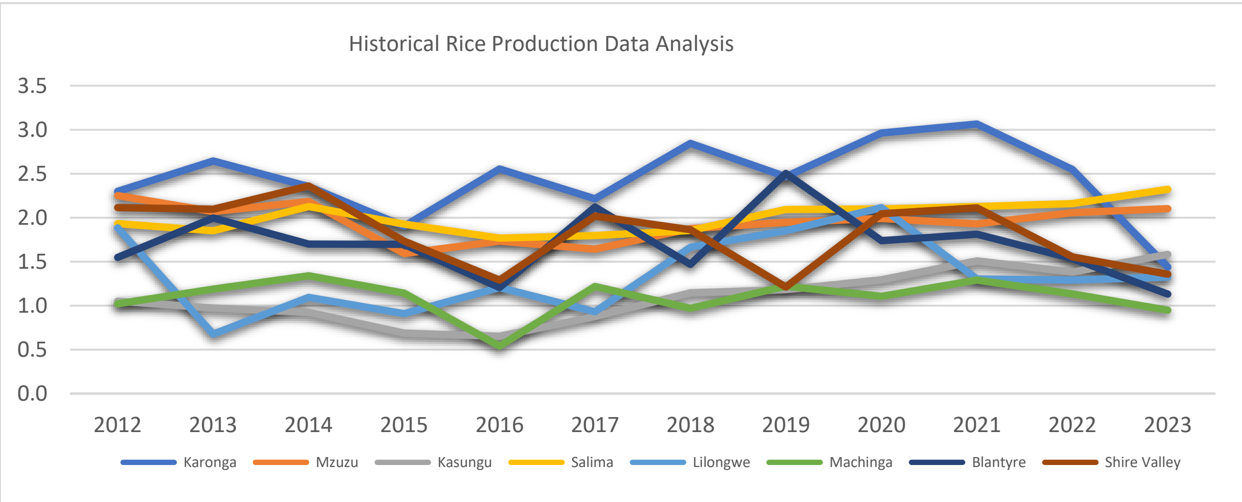
Year	**Karonga**	**Mzuzu**	**Kasungu**	**Salima**	**Lilongwe**	**Machinga**	**Blantyre**	**Shire Valley**
2012	2.5	2.2	2.5	2.2	2.1	1.1	1.7	0.7
2013	2.7	1.7	2.2	2.2	2.2	1.4	2.4	0.9
2014	2.5	2.1	2.5	2.8	2.3	1.6	2.3	1.2
2015	2.3	1.4	1.7	1.8	1.7	0.8	1.5	0.8
2016	2.4	1.5	1.8	1.8	1.7	0.5	1.2	0.6
2017	2.4	1.8	2.2	2.1	2.1	1.3	2.1	0.6
2018	2.6	1.8	2.0	1.8	1.7	0.9	1.5	0.9
2019	2.6	1.8	2.3	2.1	2.0	1.0	2.3	1.7
2020	2.9	1.9	2.6	2.3	2.1	1.3	2.6	1.7
2021	3.3	2.4	2.9	2.7	2.3	1.5	2.7	0.8
2022	2.4	2.1	2.6	2.3	2.0	1.1	1.7	0.7
2023	2.2	2.0	2.6	2.1	1.8	1.2	1.3	1.0



- **High-Yield Regions**: Karonga ADD consistently exhibits higher maize yields, peaking at 3.33 MT/ha in 2021.
- **Low-Yield Regions**: Shire Valley ADD shows the lowest yields, with a significant drop to 0.60 MT/ha in 2017.
- **Yield Fluctuations**: All regions experience fluctuations, indicating widespread exposure to agricultural risks.

Rice Yield Variability (Metric Tons per Hectare)

Year	Karonga	Mzuzu	Kasungu	Salima	Lilongwe	Machinga	Blantyre	Shire Valley
2012	2.3	2.3	1.1	1.9	1.9	1.0	1.5	2.1
2013	2.6	2.1	1.0	1.9	0.7	1.2	2.0	2.1
2014	2.4	2.2	0.9	2.1	1.1	1.3	1.7	2.4
2015	1.9	1.6	0.7	1.9	0.9	1.1	1.7	1.7
2016	2.6	1.7	0.7	1.8	1.2	0.5	1.2	1.3
2017	2.2	1.6	0.9	1.8	0.9	1.2	2.1	2.0
2018	2.8	1.9	1.1	1.9	1.7	1.0	1.5	1.9
2019	2.5	1.9	1.2	2.1	1.9	1.2	2.5	1.2
2020	3.0	2.0	1.3	2.1	2.1	1.1	1.7	2.0
2021	3.1	1.9	1.5	2.1	1.3	1.3	1.8	2.1
2022	2.5	2.1	1.4	2.2	1.3	1.1	1.5	1.6
2023	1.4	2.1	1.6	2.3	1.3	0.9	1.1	1.4



- **High-Yield Regions**: Karonga ADD also leads in rice yields, reaching 3.06 MT/ha in 2021.
- **Low-Yield Regions**: Kasungu ADD consistently records low rice yields, as low as 0.65 MT/ha in 2016.
- **Yield Fluctuations**: Similar to maize, rice yields vary significantly, reflecting the impact of systemic risks.

Note: *The data shows significant yield variability over the years, underscoring the need for effective and comprehensive risk management solutions.*

10.2.2. Adoption of Area Yield Index Insurance

Area Yield Index Insurance (AYII) product is tailored for maize and rice farmers in Malawi. This innovative insurance solution is designed to protect farmers against yield shortfalls resulting from various perils, thereby promoting agricultural sustainability and financial stability within the farming community.

The AYII product insures farmers based on a comparison between actual harvested yields and a predefined historical benchmark known as the Reference Yield. When the actual yield falls below this benchmark due to covered risks, farmers receive financial compensation to mitigate their losses. The determination of payouts is conducted through a transparent and scientifically rigorous crop-cutting process, ensuring fairness and accuracy.

10.2.3. Benefits and Perils Covered

Programme	Crop Insurance bundled with Inputs
Crop(s) to be insured	Maize; Rice
Insurer	TBA
Locations of farms	Karonga, Mzuzu, Kasungu, Salima, Lilongwe, Machinga, Blantyre & Shire Valley
Policy Period	Wet season
Proposed planting windows	TBA
Claims protocol	Crop cuts conducted at the end of the season
Farmer requirements	Good agronomical practises
Reference yield	(See table below)
Gross Indicative Premium Rate (exclusive of crop cutting costs and local taxes)	Maize – 5.05% Rice – 6.20%
Proposed Yield Guarantee	70%
Deductible	0%
Risks insured	Excessive Rainfall, Hail damage, Frost damage, Fire, Windstorm, flooding, Drought and Uncontrollable Pests and Diseases

The following table provides the reference yield parameters for the various Agroecological Zones (AEZs) covered under this policy.

These parameters are based on historical yield data and are adjusted to a yield guarantee that reflects current agricultural practices and climatic conditions:

No	AEZ	Maize Reference Yield (MT/Ha)	Rice Reference Yield (MT/Ha)
1	Karonga	1.80	1.26
2	Mzuzu	1.33	0.93
3	Kasungu	1.64	1.15
4	Salima	1.53	1.07
5	Lilongwe	1.41	0.98
6	Machinga	0.80	0.56
7	Blantyre	1.36	0.95
8	Shire Valley	0.67	0.47

10.2.4. Product structure – Area Yield Index Insurance (AYII)

The Area Yield Index Insurance product is structured to provide robust protection against yield shortfalls, offering farmers a financial safety net when their crops fail to meet expected yield levels due to insurable events. The structure of this product includes the following key elements:

- **Yield Shortfall Coverage**: The product covers yield shortfalls measured at the Unit Area of Insurance (UAI) level, using a reference yield based on long-term average yields.
- **Data Collection**: Yield data is collected through crop cuts, with the results reported within 30 days of the season's end. The data will include the seasonal production and area data for the insured crops, recorded in MT/Ha.
- **Loss Compensation**: Compensation for yield shortfalls is calculated using the following formula:
    - ***Yield Shortfall %*** = 1 - (Actual Production / Reference Yield)
    - ***Payout Calculation****:* If the Yield Shortfall exceeds the deductible, the payout is calculated as:
    - If Yield Shortfall is greater than the hurdle, payout = Yield Shortfall % x Total Value covered in District in Currency
    - Otherwise, payout = 0

10.2.5. General exclusions

Losses arising out of war and nuclear risks, malicious damage and other preventable risks are usually excluded (Illustration - Consequential loss due to delay in harvesting, detention or confiscation of produce or equipment, errors in pesticide application, theft, weight loss, mysterious disappearances, or unaccountable losses)

10.2.6. Sum insured /coverage limit

Sum insured for individual farmer can be calculated in the following basis:

- Cost of inputs from soil preparation to harvesting
- Cost of finance per acre as per a loan agreement with a financial institution

An agreed percentage of the value of the historical average yield in the unit area of insurance where the farm is located. 'Area under cultivation' shall always be expressed in 'hectares' (Illustration - all finances or input costs advanced to a farmer or a group of farmers by financial institutions e.g. Banks, SACCOs, MFIs or inputs supplied by the agro dealers for farming purposes.)

10.2.7. Yield Guarantee

This is the percentage of historical average yields usually applied by the insurance company to cater for deductible or to compensate for the yield fluctuations that are usually there with each year. It can also determine the eventual premium rate that the farmers will pay. The Yield Guarantee can be anywhere between 50% - 80% long term average yield.

10.2.8. Claims Protocol – Crop Cutting Experiments (CCEs)

The objective of conducting a crop cutting experiments is:

- To obtain reliable and timely statistics on crop sown under different crops
- Average yield per hectare of different crops
- Production of crops at a given location (Sector, district,..)
- Productivity of certain variety of crops
- To study productivity - under different agronomic/cultural practices such as type of seed, irrigation facility, use of fertilizer, pesticides, improved practices.

During the CCE activities, there are some key steps which are followed towards the successful exercise:

- Selection of crops and location based on area
- Selection of Survey Number using random numbers allotted.
- Selection of Sub-division No. based on highest survey number.
- Selection of fields within the selected Survey/Sub-division No. based on crop availability.
- Location of Experimental plot using random numbers.

And some of the key considerations for a successful yield estimation exercise include:

- **Selection of Sample Plots:** Random selection of fields within each UAI for conducting CCEs will be done by the calculating agent.

- **Methodology:** Standardized procedures of data collection as per Malawi's Ministry of Agriculture guidelines based on previous data collection protocols will be employed.

- **Data Verification:** Involvement of third-party agencies for auditing and verification to ensure transparency of exercise.

- **Payouts:** Any payouts will be processed and disbursed within 30 days after final yield data is confirmed through the crop cutting exercises reports and approved audits.

10.2.9. Eligibility - Farmer Requirements

To be eligible for coverage and claims, farmers must:

- **Use of Certified Seeds:** Plant certified maize and rice seeds suitable for their region.
- **Follow Good Agronomical Practices (GAPs):** Adhere to recommended farming practices, including proper land preparation, planting, fertilization, pest control, and harvesting techniques.
- **Record Keeping:** Maintain records of farming activities, input purchases, and any incidents affecting crop performance.
- **Participation in CCEs:** Allow access to their fields for conducting CCEs when selected.

11. SITUATION ANALYSIS ON THE EXISTING OPPORTUNITIES AND BARRIERS

The adoption of climate risk insurance products under Malawi's Affordable Inputs Program (AIP) involves evaluating the opportunities and barriers that could influence or hinder the uptake of such products. The AIP, which aims to enhance agricultural productivity by providing subsidized inputs to smallholder farmers, offers a platform for integrating climate risk insurance products to help farmers manage climate-related risks such as droughts, floods and pests.

During our field visit interaction with different stakeholders and farmers, we have noted some opportunities and barriers that could influence or hinder the uptake of the proposed integration of crop insurance scheme into existing government inputs programme:

Opportunities	Barriers
Alignment with Agricultural Support Goals/Policies: • AIP supports smallholder farmers with subsidized inputs (fertilizers and seeds) • Engagement of Insurers in managing risks and reducing financial shocks due to any climate-related risks	**Affordability and Accessibility:** • For the low-income farmers, there is a high premium cost for insurance products • Lack of visibility of insurance service providers at ground zero (limits widespread adoption)
Government support for agricultural development: • Commitment to agricultural development and climate adaptation	**Lack of awareness and understanding:** • Lack of knowledge of insurance products and the way they operate (customer education)

• Bundling crop insurance into inputs could align with national climate resilience strategies	• Skepticism towards insurance providers discourages uptake. • Informal risk-sharing systems through community groups
Growing awareness of climate risks: • Increase awareness of climate change impacts among the farmers • Positive reception to climate risk insurance solutions by farmers	**Limited Insurance Infrastructure:** • Limited number of insurance agents and brokers in rural areas • Poor accessibility to insurance products in remote areas
Product Customization: • Tailored products for specific crops, locations and farming systems	**Limited data and risk assessment tools:** • Lack of reliable local data on climate risks (e.g., rainfall and drought) • Inaccurate risk models could result in mispricing of insurance premiums.

12. INSTITUTIONAL SET-UP FOR BUNDLING CROP INSURANCE WITH THE AFFORDABLE INPUTS PROGRAM (AIP)

Bundling crop insurance with the Affordable Inputs Program (AIP) in Malawi requires a well-coordinated institutional set-up to ensure that both programs are effectively delivered to smallholder farmers. A clear structure involving both government and private stakeholders would be crucial to the success of this initiative

Private Public Partnerships (PPP) have worked well in established markets and governments are urged to consider the development of Private Public Partnerships to help expand agricultural production. Government subsidized crop insurance programs almost always take the form of a PPP, and all successful global programs have had different forms of PPP arrangements linked to the success. The government usually sets up the legal framework and selects individual insurance companies to manage and deliver the insurance policies using their expertise in quantifying risk and transferring it. While some governments restrict their involvement in subsidizing, others assume a more active role and get involved in designing and adapting crop insurance policies, collecting production statistics, operating yield forecast models as well as providing guidance in setting terms and conditions of insurance (deductibles, rates).

For the case of Malawi where the implementation of crop insurance needs to be bundled with inputs program, here below are the institutions that will play a big role to the proposed strategic framework at national level coordination:

The Ministry of Agriculture and Food Security - The Ministry will act as the central coordinating body for the bundling of crop insurance with AIP and its functions will be as follows:

- Lead policy development and integration of insurance into AIP.
- Set the regulatory framework and guidelines for participating insurance companies.

- Ensure alignment with national agricultural policies.
- Coordinate with various stakeholders (government agencies, private sector, and international partners).

The Reserve Bank of Malawi – The Regulator will oversee the insurance industry to ensure transparency, fairness, and compliance with regulations. And its functions will be as follows:

- Approve crop insurance products and ensure they are tailored for the needs of Malawian farmers.
- Regulate the premium structures and ensure affordability.
- Protect farmers' rights and address complaints or disputes related to insurance claims

The Implementation Partners (Insurance Companies) – selected private and public insurance companies will be responsible for designing and delivering the crop insurance products as part of the AIP.

The insurance companies will:

- Develop suitable insurance products such as Area Yield Index Insurance (AYII).
- Collaborate with agro-input suppliers and distribution points to embed insurance with inputs.
- Handle claims processing, payouts, and customer service.
- Provide education and awareness to farmers about insurance coverage.

The Affordable Inputs Program (AIP) Steering Committee – the committee will oversee the day-to-day integration of insurance with AIP, providing cross-agency coordination.

The steering committee will be composed of:

- Representatives from the Ministry of Agriculture and Food Security and Ministry of Finance
- Insurance Companies
- Donor Agencies
- Agro-inputs Suppliers
- Farmer Organizations.

The main functions of the steering committee will be:

- Design the operational guidelines for distributing bundled insurance and inputs.
- Ensure program monitoring, evaluation, and reporting.
- Manage resources and financial flows between government subsidies, insurance companies, and farmers.

Farmer Cooperative and Associations – the farmer cooperatives and associations will act as intermediaries to assist in the distribution and awareness of the bundled insurance program. Their main functions will be as follows:

- Organize farmers for group insurance, ensuring that the benefits of risk pooling are fully realized.
- Facilitate training and awareness-raising efforts regarding insurance benefits and claims procedures.
- Liaise with government agencies and insurance providers on behalf of farmers for grievance redressal.

Donor and Development Partners – International organizations and donors such as the World Food Program and other agricultural or climate resilience-focused entities will provide financial and technical support. Their functions under this bundled crop insurance will be:

- Support capacity building, including training farmers on insurance literacy and managing climate risk.
- Possible fund pilots and offer initial premium subsidies to ensure widespread adoption.
- Provide technical assistance for developing data infrastructure for crop monitoring and yield assessments (e.g., satellite data for Area Yield Index Insurance).

Input suppliers and distributors – Inputs suppliers (fertilizer, seeds, etc.) and distributors participating in AIP will be key channels through which crop insurance is delivered. Their key function in the implementation will be:

- Bundle crop insurance with inputs at the point of sale/distribution.
- Provide clear information on the insurance package alongside input supplies.
- Track and report distribution of insurance-covered inputs to ensure transparency and accountability.

Farmer Training and Education: Extension Services - The Government agricultural extension services and non-governmental organizations (NGOs) will be responsible for educating farmers on the insurance program, their rights, and how to file claims. Mainly, they will be responsible for:

- Provide face-to-face training and support farmers in understanding how insurance works.
- Assist farmers in navigating the insurance claim process.
- Monitor farmer satisfaction and gather feedback to improve program implementation.

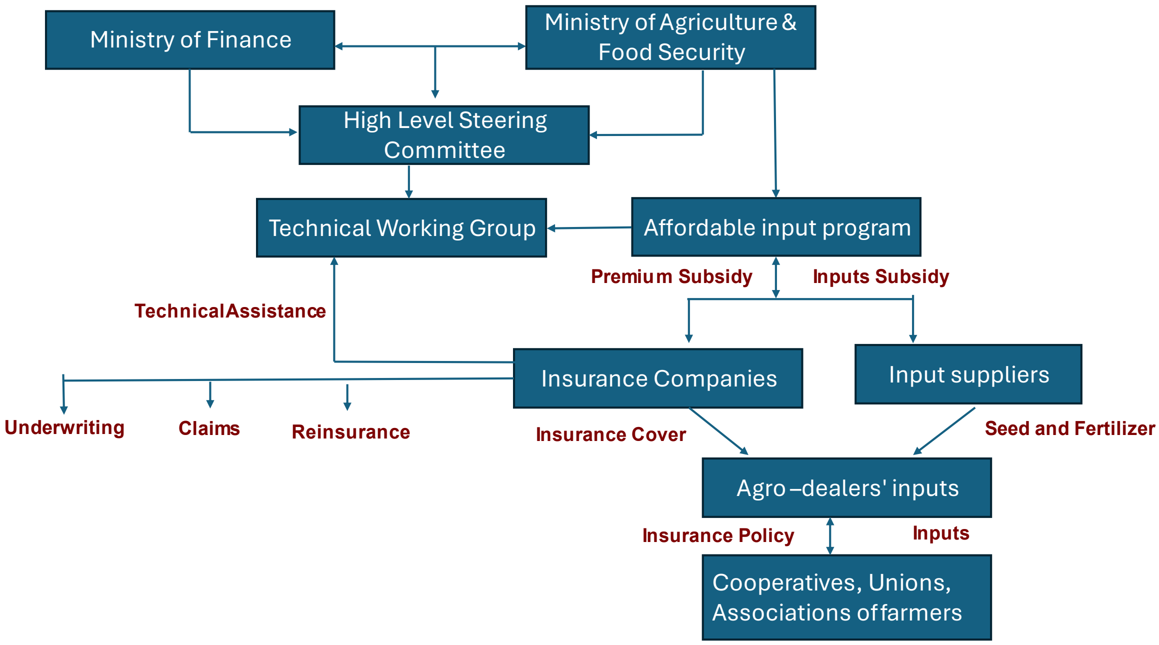
The essential pillars and achievements of this Public Private Partnership (PPP) include but are not limited to:

- Public co-financing of premiums
- Public co-financing of catastrophe losses

- Setting insurance enabling uniform terms and conditions
- Efficient, transparent and uniform settlement of claims
- Development capacity building initiatives as well as education and awareness programs
- Development and creation of policies that will ensure sustainability of the program.

12.1. PROPOSED STRUCTURE OF CROP INSURANCE EMBEDDED TO INPUTS PROGRAM AT NATIONAL LEVEL

12.1.1. Proposed Organogram



12.1.2. The Program Board

The Board shall comprise the senior members of the ministries involved in the program, Ministry of Finance and the Ministry of Agriculture & Food Security. It may be comprised of the ministers or their assignees.

12.1.3. High level steering committee

This is the committee that provides the overall guidance and policy road map of the program. It may consist of a team from the Ministry of finance, Ministry of agriculture and food security, Affordable Inputs Program Management and Insurance regulatory authority, Association of Insurers, development partners, and private sector representatives.

The committee can also look at the following:

- Policy Oversight and Strategic Direction
- Coordination Among Key Stakeholders

- Public Awareness and Communication Strategy
- Approval of the value chains to be covered
- Review and monitor the progress of the project
- Monitor capacity building of implementation partners
- Review budgetary requirements and advice on incorporation into the budget
- Spearhead and implement the development and implementation of policy frameworks and guidelines that would ensure growth and sustainability of the program
- Act on issues that need to be solved under the program

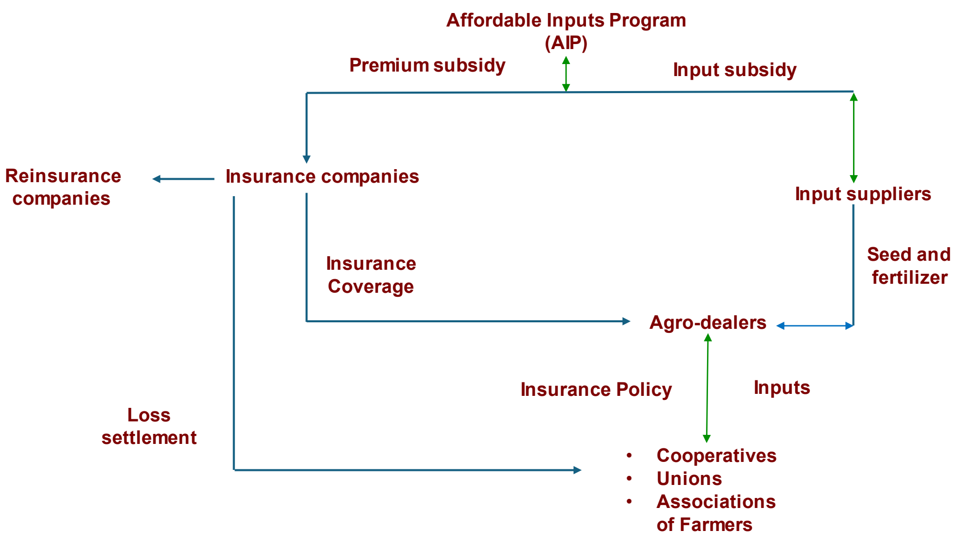
12.2. Technical working Group

The Technical Working Group (TWG) under crop insurance program embedded with the Affordable Inputs Program (AIP) will play a critical role in the technical and operational aspects of the program. The TWG will provide expert support to the High-Level Steering Committee and ensure that the program's technical elements are sound, feasible, and effectively implemented. This technical team will be within the Ministry of Agriculture under Crop or AIP department:

- Integration of Inputs and crop Insurance
- Lay down procedures and principles /operational guidelines and modalities for the operation of crop insurance embedded with inputs program
- Manage data and information collection and access guidelines (facilitate the program designer and implementing agencies with the weather and yield data on a near real-time basis as well as oversee the management of the crop cutting exercises (CCE))
- Crop Insurance demand assessment
- Product design and rating as well as getting the necessary approvals
- The design of operating systems and procedures, most notably underwriting and claims control and loss assessment procedures
- Training for insurance companies, Inputs Suppliers, Inputs agro dealers, MFIs and Banks, farmer cooperatives and farmer groups.
- review and monitor the implementation of the scheme including product terms and coverage options.
- Coordination with Development Partners.
- Risk Mitigation and Climate Adaptation Strategies.
- Reporting and Communication with the Steering Committee.

12.3. Proposed Distribution and Administration Model

The distribution model for crop insurance embedded with the Affordable Inputs Program (AIP) will need to ensure that smallholder farmers can easily access both agricultural inputs (e.g., seeds, fertilizers) and insurance coverage. The distribution system must be efficient, inclusive, and ensure that both inputs and insurance reach the intended beneficiaries.



12.3.1. Crop Insurance distribution options and Potential Aggregators

To distribute the crop insurance embedded with Malawi's Affordable Inputs Program (AIP), several strategic options could be considered, leveraging existing networks and infrastructure.
Here are some key distribution channels:

- **Government Agricultural Extension Services** – Involvement of the government's existing network of agricultural extension officers to educate farmers about the benefits of crop insurance and distribute policies alongside inputs. These extensions Officers are trusted by the farmers and have established relationships.

- **Private Agro – dealers and Inputs Suppliers** - Partner with agro-dealers who already supply fertilizers, seeds, and other inputs under the AIP. Farmers would receive insurance bundled with these products. There are established supply chains and direct contact with farmers, distribution is localized and convenient for the farmers.

- **Mobile Network Operators and Digital Platforms** - Use mobile phone platforms (e.g., SMS-based systems or apps) to register farmers for crop insurance when they purchase inputs under AIP. Premium payments could also be made via mobile money.

- **Banks and Microfinance Institutions -** Partner with banks and microfinance institutions, especially those offering loans to farmers for agricultural inputs. Insurance could be bundled with loans or savings products. These institutions already provide financial services to farmers and are familiar with the needs and risks of agriculture. They can offer bundled products to make the process seamless.

- **Farmer Cooperatives and Associations -** Leverage farmer cooperatives and associations to distribute crop insurance as part of their input supply and collective bargaining processes. Cooperatives are trusted, collective buying power can reduce insurance costs, and they offer strong peer support for understanding and managing the insurance.

- **Affordable Inputs Program Registration centers -** Farmers register for the AIP through specific centers. These centers could also be used to distribute crop insurance alongside subsidized inputs.

By interacting with different stakeholders, we would recommend that the crop insurance to be distributed through Agro – dealers for inputs or directly at Inputs shop centers. Farmers are already familiar with these centers as part of the AIP process, providing a streamlined approach.

12.4. Key Challenges for Uptake

Embedding crop insurance into Malawi's Affordable Inputs Program (AIP) has great potential to protect farmers from agricultural risks. However, there are several key challenges to consider that could hinder uptake and successful implementation:

- **Low awareness and understanding of insurance -** There is a very low level of awareness and knowledge about agricultural insurance on the part of crop insurance farmers. The level of current supply of suitable agricultural insurance products and demand for insurance is low. Many farmers in Malawi have limited knowledge or misconceptions about crop insurance. In some cases, they might not understand its value or how it works.
- **Lack of trust in insurance providers (complexity of claims process) -** There is a lack of trust in insurance companies due to unfamiliarity, previous bad experiences, or perceptions of delayed or denied claims. Farmers face difficulties in understanding and navigating the claims process, especially if it is lengthy, involves complicated documentation, or requires frequent interaction with insurance agents.

- **Affordability of insurance premiums –** This can still be a challenge to the uptake even though the insurance is embedded within the subsidized inputs program, the premiums can still be viewed as unaffordable by smallholder farmers, who often operate with slim margins.

- **Data collection and verification challenges** – Insurers need accurate and timely data on weather conditions, crop yields, and farm locations to assess risks and calculate premiums. In Malawi, collecting this data can be challenging due to the dispersed nature of smallholder farms and limited infrastructure for data collection. Lack of reliable data could lead to inaccurate risk assessments, higher premiums, or delays in payouts, reducing the attractiveness of the insurance.

- **Lack of technical expertise and exposure to international agricultural insurance technology -** insurance companies have had little or no exposure to international practice in agricultural insurance and they lack knowledge and awareness in the design, rating and implementation of agricultural insurance.

12.5. Risk Management

Risk management in crop insurance, particularly when embedded with agricultural inputs programs like Malawi's Affordable Inputs Program (AIP), is critical to ensuring both farmer protection and program sustainability.

Risk management measures can be classified into three types:

- **Risk mitigation (ex-ante):** Actions designed to reduce the likelihood of risk or to reduce the severity of losses (for example, soil and water conservation measures, changes in cropping patterns, adoption of improved practices that improve performance and reduce risks such as conservation farming, using short duration and tolerant varieties, irrigation and flood control infrastructure).

- **Risk transfer (ex-ante):** Actions that transfer the risk to a willing third party. These mechanisms will usually trigger compensation in the case of a risk-generated loss (for example, purchasing insurance, reinsurance, financial hedging tools).

- **Risk coping (ex-post):** Actions that help the affected population and the government cope with the loss. They usually take the form of compensation (cash or in-kind), social protection programs, and livelihood recovery programs (for example, government assistance to farmers, debt restricting, contingent financing).

How instruments are applied for a given risk will likely depend on the probability of the risk and the severity of its impacts. Strategic choices of risk management instruments will likely include a combination of the three types of risk management instruments. The table below highlights some of the indicative interventions that could be undertaken to manage selected risks in the country.

Insurance as an intervention for Risk Management

Risk	Mitigation	Transfer	Coping
Pests and diseases	• Integrated pest management • Pest and disease-tolerant varieties • Good agricultural practices (GAPs)/ extension services	• Insurance	• Rapid disease response system • Information on control measures
Drought/ erratic rain	• Soil and water conservation • Training in improved agronomic practices • Drought-tolerant varieties • Irrigation	• Insurance	• Social safety net programs and emergency relief • Grain aggregation • Storage network • Savings groups
Floods	• Soil and water conservation • Drainage • Flood-tolerant varieties • GAPs/extension services • Infrastructure	• Insurance	• Social safety net programs and emergency relief • Grain aggregation • Storage network • Savings groups
Domestic price volatility	• Improved market information systems • Training on post -harvest handling, storage and management	• Hedging	• Social safety net programs and emergency relief • Grain aggregation • Storage network • Savings groups
International price volatility	• Improved market information systems • Regional trading system • Shorten farm-to-export time	• Futures contracts • Hedging • Options to buy/ sell on international exchanges	• Social safety net programs and emergency relief • Grain aggregation • Storage network • Savings groups

Risk transfer solutions such as agricultural insurance are one of the effective and efficient risk management instruments. Successful functioning of farmer-level agricultural insurance requires a number of preconditions such as: affordability (ability and willingness to pay premiums); relatively low frequency of events; robust crop and weather data infrastructure; and farmers' access to financial products and services.

We have realized that an effective risk management in crop insurance embedded in Malawi's inputs program requires collaboration between the government, insurers, farmers, and global reinsurers. Proper risk assessment, clear communication of the insurance terms, and quick response mechanisms are all key to minimizing the negative impact of climate and other agricultural risks.

13. IMPLICATIONS AND RECOMMENDATIONS

Through the discussions we had with different stakeholders and the interaction with farmers across the districts under the selected crops, they have emphasized that embedding crop insurance within Malawi's Affordable Inputs Program (AIP) will present significant opportunities for increasing agricultural resilience, but it will also has several implications that require strategic recommendations. Below are the key implications and recommendations for successful integration:

13.1. Implications

- **Increased financial protection for farmers** - Embedding crop insurance with AIP helps protect smallholder farmers from climate-related risks, such as droughts or floods, by offering financial compensation when crop losses occur. This improves food security and resilience.

- **Improved risk management for input investments** - Farmers are more likely to invest in high-quality inputs (fertilizers, seeds) knowing they have financial protection through insurance. This could lead to higher yields and better returns on investment.

- **Potential for higher adoption of crop insurance** - Bundling crop insurance with subsidized inputs simplifies access, potentially increasing the adoption rate of insurance among smallholder farmers.

- **Sustainability of insurance premium subsidies** - Subsidizing crop insurance premiums under AIP will make it affordable in the short term, but questions around long-term financial sustainability arise, especially with donor dependence or rising climate-related risks.

- **Impact on government budgets** - embedding insurance in the inputs program will require additional budget allocation for subsidies and administrative costs, potentially straining government resources.

13.2. Recommendations

- **Develop an Integrated Agriculture Insurance Package for AIP Beneficiaries:** Integrate a compulsory, bundled crop insurance package within the AIP. This package should cover the primary crops supported by the AIP and provide protection against droughts, floods, and other climate-related risks. The insurance product should be index-based, leveraging satellite, yield and rainfall data to trigger payouts automatically in the event of weather/ yield anomalies. This model reduces transaction costs and ensures timely compensation to affected farmers.

- **Adopt a Subsidized Insurance Model with Government Support:** To make insurance affordable for smallholder farmers, the government should subsidize a portion of the premium, as done with inputs under the AIP. The study recommends that premiums be set between 5-7% of the input cost, with 50-70% subsidized by the government, depending on the farmer's vulnerability level and region. The proposal for the government to subsidize 50-70% of the premium is to replicate the level of subsidy the government is already practicing with AIP. The subsidy model should be designed to decrease gradually, encouraging market sustainability in the long term.

- **Build a Comprehensive Data Infrastructure for Insurance:** Address the data gaps by establishing a centralized data infrastructure that compiles and shares climate, yield, and soil data across Malawi. Investment in automated weather stations and partnerships with satellite data providers will enhance data accuracy for index-based insurance models. Moreover, data-sharing arrangements between government agencies and insurance providers should be formalized to support effective risk assessment and pricing.

- **Strengthen Insurance Literacy and Farmer Outreach Programs:** Raise awareness among farmers about the benefits, functionality, and claim procedures of agricultural insurance. The government, in partnership with insurance providers and NGOs, should roll out targeted literacy campaigns that use community engagement, demonstration sites, and farmer field schools. These outreach programs will empower farmers to make informed decisions and actively participate in the insurance process.

- **Implement a PPP Model for Sustainable Insurance Delivery:** Strengthen public-private partnerships between the government, insurance companies, input suppliers, and mobile network operators to streamline operations, share data, and coordinate input distribution with insurance policies. A Public-Private Partnership (PPP) approach should be adopted to combine the strengths of the government and private insurers in delivering insurance services. The government can provide data infrastructure, subsidies, and regulatory support, while private insurers focus on product development, risk assessment, and distribution. Establishing an Agriculture Insurance Fund (AIF) as part of this PPP framework would help sustain the subsidy model and cover high-risk years.

- **Establish a Risk Pool and Reinsurance Framework:** To mitigate risk exposure, a pooled risk-sharing arrangement should be set up, allowing insurance providers to share the liability associated with extreme weather events. A national risk pool, backed by international reinsurance, would stabilize premium costs, make payouts more predictable, and reduce the financial strain on any single insurer. Collaboration with global reinsurance providers will strengthen the program's resilience to large-scale losses and attract additional investment.

- **Enhance Policy and Regulatory Support for Agriculture Insurance:** Effective policy and regulatory measures are essential for successful program implementation. The Ministry of Agriculture, along with the Insurance Regulatory Authority of Malawi, should establish a conducive regulatory framework, including clear guidelines on premium subsidies, data standards, product approval, and claims management. Regulatory support will facilitate program transparency, accountability, and consumer protection.

- **Pilot Program for Scaling and Refinement:** Initiate a pilot program in high-risk districts where agriculture insurance could have the most significant impact. This pilot phase will enable stakeholders to refine product design, assess challenges, and test distribution models in a controlled environment. Insights gained from the pilot will inform the national roll-out and allow for adjustments that enhance program effectiveness and farmer satisfaction.

- **Digitalize Insurance Processes for Efficiency:** Invest in digital platforms to streamline insurance administration, enrollment, and claims processing. A digital system will improve transparency, reduce administrative costs, and make insurance accessible to more remote regions. Additionally, integrating mobile platforms as suggested earlier for premium payments and payout distribution will facilitate farmer participation and increase program efficiency.

- **Continuous Monitoring, Evaluation, and Adaptation:** Establish a robust monitoring and evaluation (M&E) framework to track program performance and ensure continuous improvement. Key metrics should include farmer participation, claim frequency, payout adequacy, and impact on resilience and income stability. Annual assessments should provide feedback to policymakers and insurance providers, facilitating adaptive changes to respond to evolving challenges and farmer needs.

In a conclusion, embedding crop insurance within Malawi's Affordable Inputs Program offers significant potential for increasing resilience among smallholder farmers by protecting their investments in agricultural inputs. However, to realize these benefits, challenges related to trust, education, affordability, and coordination need to be addressed through strategic interventions. By fostering partnerships, leveraging technology, and investing in farmer awareness, Malawi can create a more resilient agricultural sector, better equipped to face climate-related risks.