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Mitigating Production Risks for Smallholder Soyabean Farmers in Chongwe District: Examining the Role of Commodity Markets

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ABSTRACT:
This study investigates the challenges faced by smallholder soyabean farmers in Chongwe District, Zambia, focusing on mitigating production risks through financial and market-based interventions. Smallholder farmers are highly vulnerable to climate variability, price fluctuations, and limited access to structured risk management tools, which compromise their economic stability and productivity. The study explores the role of micro-insurance, structured commodity markets, and financial literacy initiatives in enhancing resilience among these farmers. Using a mixed-methods approach that combines qualitative interviews with key stakeholders and quantitative surveys conducted among smallholder farmers, the study finds that despite the potential benefits of financial risk management tools such as weather-index insurance and futures contracts, their adoption remains low due to factors such as high costs, limited awareness, and logistical constraints. Additionally, the research highlights that a lack of financial literacy impedes farmers' ability to make informed decisions regarding risk management, further exacerbating economic vulnerability. To address these challenges, the study recommends tailored financial literacy programs, improved accessibility to structured markets, and the development of affordable micro-insurance products suited to smallholder farmers' needs. By bridging the gap between existing financial instruments and farmers' practical realities, these interventions have the potential to enhance agricultural sustainability and economic resilience. The findings contribute to policy discussions aimed at fostering inclusive financial systems and strengthening agricultural risk management frameworks in Zambia and similar contexts in Sub-Saharan Africa.

Keywords: Smallholder farmers, risk management, micro-insurance, commodity markets, financial literacy, climate resilience, Zambia

1. INTRODUCTION

Agriculture remains a cornerstone of Zambia's economy, providing employment and sustenance for a significant portion of the population. Smallholder farmers, who constitute the majority of agricultural producers, play a crucial role in ensuring food security and economic stability. However, their productivity is hindered by numerous challenges, including unpredictable climate patterns, price volatility, and limited access to structured financial and market instruments. Among these farmers, soyabean producers in Chongwe District face significant risks that threaten their livelihoods and the sustainability of their farming enterprises.

The agricultural sector in Zambia is largely rain-fed, making it highly susceptible to climate variability.

Recurring droughts, erratic rainfall, and extreme weather conditions have frequently led to substantial crop failures. The 2015/2016 El Niño-induced drought, for example, resulted in widespread agricultural losses, underscoring the vulnerability of smallholder farmers to environmental shocks. In addition to climate-related risks, farmers also struggle with fluctuating market prices due to inconsistent demand, inadequate storage facilities, and a lack of organized commodity markets. These factors expose them to financial instability, forcing many to sell their produce at unfavorable prices or resort to informal coping mechanisms, such as selling off livestock or reducing household consumption.

Despite the existence of financial risk management tools, such as micro-insurance and structured commodity markets, their adoption among smallholder farmers remains limited. Several studies have highlighted the benefits of financial instruments, including weather-index insurance, futures contracts, and warehouse receipt systems, in stabilizing incomes and mitigating production risks. However, structural barriers, including high costs, lack of awareness, and logistical constraints, have prevented widespread utilization of these tools. In Zambia, initiatives such as the Zambia Agricultural Commodity Exchange (ZAMACE) have been established to enhance price transparency and provide farmers with opportunities for structured trading. Nonetheless, smallholder farmers in rural areas, including Chongwe District, often find it difficult to participate in these markets due to limited financial literacy, inadequate market linkages, and restricted access to financial services.

In addressing these challenges, the role of financial literacy cannot be overlooked. Many smallholder farmers lack the necessary knowledge to navigate formal financial markets, assess risk exposure, and utilize available risk management tools effectively. Without adequate financial education, even well-structured financial products may fail to reach their intended beneficiaries. Studies have shown that targeted financial literacy programs can significantly improve farmers' decision-making capabilities, enhance their understanding of market dynamics, and encourage the adoption of financial instruments designed to protect them from economic shocks.

Recognizing these pressing issues, this study explores the socio-economic and institutional factors influencing the adoption of risk management tools among smallholder soyabean farmers in Chongwe District. It examines how commodity markets and micro-insurance products can be tailored to meet the unique needs of smallholder farmers, thereby improving resilience and promoting sustainable agricultural practices. Furthermore, the study evaluates the effectiveness of financial literacy initiatives in enhancing farmers' ability to engage with formal financial institutions and structured market systems. By identifying key barriers and proposing practical solutions, the research aims to contribute to policy discussions that support inclusive financial systems and strengthen agricultural risk management frameworks in Zambia and similar contexts across Sub-Saharan Africa.

A. Objectives

General Objective

To explore the challenges faced by smallholder soyabean farmers in Chongwe District and identify effective financial and market-based interventions to enhance their resilience and economic stability.

Specific Objectives

1. **To assess the socio-economic and climatic risks affecting smallholder soyabean farmers.** Understanding key risks such as climate variability, market price fluctuations, and financial constraints will provide insights into the vulnerabilities impacting agricultural productivity.
2. **To evaluate the awareness and adoption of financial risk management tools.** Identifying the extent

to which farmers use financial instruments such as micro-insurance, weather-index insurance, and futures contracts will help determine barriers to adoption and potential areas for improvement.

3. **To examine the role of structured commodity markets in price stability and market access.** Analyzing how platforms like the Zambia Agricultural Commodity Exchange (ZAMACE) influence farmers' ability to secure fair prices and reduce income volatility is crucial in improving market participation.
4. **To analyze the impact of financial literacy on the adoption of risk management strategies.** Assessing farmers' understanding of financial tools and market mechanisms will highlight the importance of financial education in promoting informed decision-making.
5. **To identify barriers to the adoption of financial and market-based risk management tools and propose solutions.** Addressing institutional, economic, and logistical challenges can help policymakers and stakeholders develop effective interventions to enhance financial inclusion and market access for smallholder farmers.

By addressing these objectives, the study aims to contribute to the development of targeted policies and programs that strengthen smallholder farming, improve financial resilience, and promote sustainable agricultural practices in Zambia.

B. Theoretical Framework

The study is anchored in two primary theoretical perspectives: the Risk Management Theory and the Sustainable Livelihoods Framework. These theories provide a foundation for understanding how smallholder soyabean farmers in Chongwe District navigate economic uncertainties, climatic risks, and market instabilities.

Risk Management Theory

Risk Management Theory (Knight, 1921) explains how individuals and organizations assess, mitigate, and respond to uncertainties. In the context of agriculture, risk management involves strategies that help farmers cope with unpredictable weather conditions, fluctuating market prices, and financial instability. Agricultural risk management frameworks emphasize the use of financial instruments such as insurance, futures contracts, and structured commodity markets to stabilize income and reduce vulnerability (Hardaker et al., 2004). This theory underpins the study's examination of how smallholder farmers adopt or fail to adopt financial risk management tools in response to external shocks.

Sustainable Livelihoods Framework (SLF)

The Sustainable Livelihoods Framework (Chambers & Conway, 1992) provides a holistic approach to understanding the factors that influence rural livelihoods, including natural, human, financial, and social capital. This framework is particularly relevant to smallholder farmers, as it highlights how access to financial resources, education, and institutional support affects their ability to manage agricultural risks. The SLF posits that sustainable livelihoods depend on the ability to combine assets and external support systems effectively (Scoones, 1998). This theory helps contextualize the role of financial literacy, structured markets, and policy interventions in enhancing the resilience of smallholder farmers.

2. LITERATURE REVIEW

Agricultural risk management has been widely studied as smallholder farmers worldwide face challenges arising from climate variability, price fluctuations, and limited financial access. Various studies highlight that smallholder farmers in developing countries are particularly vulnerable to these risks due to their reliance on rain-fed agriculture and their exclusion from formal financial systems (Dercon &

Christiaensen, 2011). The adoption of financial risk management tools, including micro-insurance and structured commodity markets, has been suggested as a solution, yet their implementation remains limited due to barriers such as affordability and lack of awareness (Mahul & Stutley, 2010).

Financial inclusion plays a crucial role in agricultural resilience. Binswanger-Mkhize et al. (2012) argue that access to credit and insurance enables farmers to invest in improved inputs and technologies, reducing their vulnerability to shocks. However, financial exclusion remains a persistent issue in Sub-Saharan Africa, where a significant proportion of rural populations do not have access to banking services (Zeller & Sharma, 2000). Digital financial services and microfinance have been proposed as solutions to bridge this gap, but institutional and infrastructural challenges continue to limit their effectiveness (Cull et al., 2014).

Structured commodity markets have been recognized for their potential to stabilize prices and provide farmers with greater access to competitive markets. The establishment of the Zambia Agricultural Commodity Exchange (ZAMACE) aimed to enhance price transparency and market efficiency, yet its impact has been constrained by logistical challenges and low farmer participation (Jayne et al., 2010). Studies by Barrett and Bellemare (2011) indicate that structured markets improve market efficiency but require strong institutional support and policy frameworks to function effectively. Despite their benefits, smallholder farmers continue to depend on informal trading channels, which expose them to exploitative pricing and income volatility.

Financial literacy is another critical factor influencing farmers' ability to engage with risk management tools. Research by Lusardi and Mitchell (2014) shows that individuals with higher financial literacy levels are more likely to make informed financial decisions. In rural African contexts, financial literacy remains underdeveloped, contributing to the low uptake of available financial instruments (Cole et al., 2011). Studies in Zambia suggest that targeted financial education programs can enhance farmers' understanding of risk management options, thereby improving adoption rates (World Bank, 2018).

Despite extensive research on agricultural risk management, several gaps remain. Few studies have specifically examined the interaction between financial literacy, structured markets, and risk management adoption among smallholder farmers in Zambia. Additionally, while existing literature highlights the importance of policy support in fostering financial inclusion, further research is needed to assess the effectiveness of current policy interventions. Addressing these gaps can provide valuable insights into improving financial and market access for smallholder farmers, ultimately enhancing their resilience and economic stability.

3. METHODOLOGY

This study employed a mixed-methods approach, integrating both qualitative and quantitative research methodologies to comprehensively analyze the challenges faced by smallholder soyabean farmers in Chongwe District and assess the effectiveness of financial and market-based risk management tools. The methodological design was structured to capture a holistic understanding of the socio-economic, institutional, and climatic factors influencing farmers' ability to adopt risk mitigation strategies.

Study Area

The research was conducted in Chongwe District, located in Lusaka Province, Zambia. Chongwe is predominantly a rural district with a significant proportion of its population engaged in agriculture. The district is characterized by a mix of subsistence and smallholder farming, with soyabean being one of the key cash crops cultivated. Given its dependence on rain-fed agriculture, the district is highly susceptible

to climatic fluctuations, including erratic rainfall patterns, droughts, and flooding, all of which pose significant risks to agricultural productivity (FAO, 2020). Additionally, the district's proximity to Lusaka presents both opportunities and challenges in terms of market access, infrastructure development, and financial services availability. The study area was chosen due to its relevance in the national agricultural landscape and the pressing need to address production risks faced by smallholder farmers (ZNFU, 2021).

Research Design

A concurrent triangulation mixed-methods research design was adopted, allowing for the simultaneous collection and analysis of qualitative and quantitative data. This approach enabled the study to triangulate findings from different data sources, ensuring a robust and well-rounded understanding of the research problem (Creswell & Plano Clark, 2018). The quantitative component focused on gathering numerical data regarding farmers' socio-economic characteristics, risk exposure levels, and adoption of financial tools, while the qualitative component sought to capture in-depth perspectives through interviews and discussions with key stakeholders. This methodological approach was selected to ensure the validity and reliability of the research findings, as well as to enable an extensive exploration of both statistical trends and underlying reasons behind risk management decisions.

Sample Population and Sampling Techniques

The study targeted smallholder soyabean farmers in Chongwe District, along with other key stakeholders, including agricultural extension officers, financial service providers, and policymakers. A multi-stage sampling technique was used to ensure the representation of diverse groups within the study population.

Quantitative Sample Selection

A stratified random sampling method was employed to select 80 smallholder soyabean farmers. The stratification was based on farm size, gender, and farming experience to ensure a diverse and representative sample (Fink, 2013). Structured questionnaires were administered to collect data on demographic characteristics, farming practices, risk exposure, financial literacy levels, and the utilization of risk management tools. The stratification was essential to capture variations in financial access, risk exposure, and market participation.

Qualitative Sample Selection

Purposive sampling was used to select 20 key informants, including agricultural extension officers, representatives from financial institutions, commodity market experts, and policymakers. These stakeholders were chosen based on their expertise and involvement in agricultural risk management (Ritchie et al., 2014). Semi-structured interviews were conducted to gain deeper insights into the institutional and structural factors affecting the adoption of financial instruments among smallholder farmers. The inclusion of diverse stakeholders allowed the study to examine the role of policy frameworks, financial institutions, and agricultural support services in shaping farmers' decision-making processes.

Data Collection Methods

The study utilized a combination of primary and secondary data collection methods to ensure a comprehensive assessment of the research objectives.

1. Structured Surveys

A structured questionnaire was designed and administered to the selected smallholder farmers. The questionnaire covered various aspects, including demographic information, farming practices, risk management strategies, awareness and use of financial tools, and barriers to adopting structured financial

services (De Vaus, 2014). The questions were designed to capture both objective and perception-based responses, allowing for a nuanced understanding of farmers' perspectives.

2. Key Informant Interviews (KIIs)

Semi-structured interviews were conducted with key stakeholders, focusing on the role of financial institutions, government policies, and market structures in shaping farmers' risk management decisions. These interviews provided qualitative insights that complemented the quantitative findings, allowing for a deeper understanding of the systemic barriers and enablers of financial inclusion and risk management among smallholder farmers (Creswell, 2014).

3. Focus Group Discussions (FGDs)

Two focus group discussions, each consisting of 8-10 farmers, were held to explore communal perspectives on risk management. These discussions facilitated an in-depth understanding of collective challenges, coping strategies, and perceptions regarding financial and market-based interventions (Krueger & Casey, 2015). FGDs provided valuable information on peer influence, shared experiences, and knowledge gaps related to risk management.

Secondary Data Analysis

Relevant secondary data, including reports from the Food and Agriculture Organization (FAO), Zambia Agricultural Commodity Exchange (ZAMACE), and other agricultural research institutions, were reviewed to contextualize findings within the broader national and regional agricultural landscape (Mahul & Stutley, 2010). Government reports, policy documents, and previous research studies were analyzed to draw comparisons and enhance the credibility of the study.

Data Analysis Techniques

A combination of descriptive, inferential, and thematic analysis techniques was used to interpret the collected data:

1. Quantitative Data Analysis

The quantitative data collected through structured surveys were analyzed using Statistical Package for the Social Sciences (SPSS) version 16. Descriptive statistics, including frequencies, percentages, and means, were used to summarize key variables. Inferential statistical methods such as correlation analysis and regression models were applied to identify relationships between demographic factors and the adoption of financial risk management tools (Alderman & Haque, 2006). Chi-square tests were also conducted to determine associations between categorical variables.

2. Qualitative Data Analysis

Thematic analysis, as outlined by Braun and Clarke (2006), was employed to analyze qualitative data from interviews and focus group discussions. The data were transcribed, coded, and categorized into themes, which were then compared against the quantitative findings to establish patterns and insights.

3. Triangulation

To enhance the validity and reliability of findings, data from multiple sources were cross-verified. The integration of quantitative and qualitative findings allowed for a more nuanced understanding of the key research questions.

Ethical Considerations

Ethical approval for the study was obtained from relevant institutional review boards. Informed consent

was sought from all participants before data collection, ensuring that they were fully aware of the study's purpose and their right to withdraw at any time. Confidentiality and anonymity of participants were strictly maintained (McKinley et al., 2016).

The mixed-methods approach adopted in this study provided a comprehensive framework for understanding the complexities of agricultural risk management among smallholder soyabean farmers in Chongwe District. By integrating both quantitative and qualitative data, the study was able to capture diverse perspectives and offer evidence-based recommendations to enhance financial literacy, improve market access, and increase the adoption of risk management tools.

4. FINDINGS

The findings of this study provide a comprehensive understanding of the challenges faced by smallholder soyabean farmers in Chongwe District, particularly regarding their vulnerability to production risks and financial instability. The results highlight key socio-economic, institutional, and environmental factors influencing farmers' ability to adopt financial and market-based risk management tools. The findings are categorized into major thematic areas, including climate-related risks, financial literacy and inclusion, structured commodity markets, and policy interventions.

Climate-Related Risks and Their Impact on Soyabean Farming

Climate variability remains one of the most significant challenges for smallholder soyabean farmers in Chongwe District. The study found that unpredictable rainfall patterns, prolonged dry spells, and extreme weather events, such as droughts and floods, have led to substantial yield losses. According to the Food and Agriculture Organization (FAO, 2020), climate change disproportionately affects smallholder farmers due to their reliance on rain-fed agriculture. Respondents indicated that in recent years, changes in weather patterns have increased the uncertainty of planting and harvesting times, resulting in reduced productivity and income instability.

Furthermore, limited access to climate adaptation strategies, such as drought-resistant seed varieties and irrigation facilities, exacerbates the vulnerability of these farmers. Research by Lobell et al. (2011) supports the findings, indicating that climate-resilient technologies are crucial for mitigating agricultural risks in Sub-Saharan Africa. However, in Chongwe District, the high cost of such technologies and a lack of awareness among farmers prevent widespread adoption.

Financial Literacy and Inclusion

The findings reveal that low levels of financial literacy significantly hinder the adoption of risk management tools among smallholder soyabean farmers. Many respondents demonstrated limited understanding of financial products such as micro-insurance, agricultural credit facilities, and savings schemes. This aligns with findings from Lusardi and Mitchell (2014), who emphasize that financial literacy is a key determinant in individuals' ability to make informed financial decisions.

Limited access to financial services was also identified as a major barrier. According to the World Bank (2018), only 34% of adults in Zambia have access to formal banking services. The study found that many farmers rely on informal lending mechanisms, such as borrowing from family members or community savings groups, which often come with high interest rates and unfavorable repayment conditions. Additionally, a lack of banking infrastructure in rural areas makes it difficult for farmers to access financial institutions that offer risk management tools.

Adoption of Structured Commodity Markets

The study found that the majority of smallholder soyabean farmers in Chongwe District sell their produce

through informal market channels, often at lower-than-market prices. The absence of structured commodity trading mechanisms, such as the Zambia Agricultural Commodity Exchange (ZAMACE), limits their ability to negotiate better prices and plan for future investments. According to Barrett and Bellemare (2011), structured markets provide farmers with price stability, reducing the risks associated with market fluctuations.

Despite the potential benefits of participating in structured markets, the findings indicate that several barriers exist, including lack of awareness, high transaction costs, and logistical challenges in transporting produce to designated exchange centers. Similar findings by Jayne et al. (2010) suggest that without government incentives and support, smallholder farmers in Zambia struggle to integrate into structured commodity markets.

Effectiveness of Policy Interventions

The findings also assessed the effectiveness of existing policy interventions aimed at improving financial inclusion and agricultural risk management. The study found that while several policies have been introduced to support smallholder farmers, implementation gaps remain a major challenge. For example, government-backed microfinance programs intended to provide affordable credit to farmers often suffer from bureaucratic delays and limited outreach.

Research by Mahul and Stutley (2010) highlights that successful agricultural risk management policies require coordinated efforts between government agencies, financial institutions, and the private sector. However, the study found that in Chongwe District, limited coordination among these stakeholders has led to inefficiencies in policy implementation. Additionally, the lack of targeted farmer education programs further limits the impact of policy interventions, as many farmers remain unaware of available support mechanisms.

5. RECOMMENDATIONS

Based on the findings of this study, several key recommendations are proposed to enhance the resilience, financial inclusion, and market participation of smallholder soyabean farmers in Chongwe District. These recommendations target policymakers, financial institutions, agricultural stakeholders, and farmers themselves to ensure sustainable solutions to the identified challenges.

Enhancing Climate Adaptation Strategies

Given the significant impact of climate variability on soyabean production, there is a need for proactive climate adaptation strategies. The following actions should be prioritized:

- Promote the use of drought-resistant soyabean seed varieties and climate-smart agricultural practices to reduce vulnerability to erratic weather patterns.
- Expand irrigation infrastructure and provide subsidies or financing options to enable farmers to invest in irrigation systems.
- Strengthen agricultural extension services to ensure farmers receive timely information on climate risks and adaptation techniques.
- Develop early warning systems that provide farmers with accurate weather forecasts and climate advisory services to facilitate better planning.

Improving Financial Literacy and Inclusion

Limited financial literacy was identified as a major barrier to the adoption of risk management tools. To address this:

- Implement targeted financial literacy training programs tailored for smallholder farmers, covering to-

pics such as savings, credit management, insurance, and structured market participation.

- Increase outreach by financial institutions in rural areas through mobile banking, agent banking, and digital financial services.
- Develop simplified and farmer-friendly financial products that are affordable and easy to understand.
- Strengthen collaborations between government agencies, NGOs, and financial institutions to ensure inclusive financial education initiatives.

Strengthening Access to Agricultural Insurance and Credit

The study highlighted the low adoption of agricultural insurance and credit services due to affordability and accessibility challenges. To improve uptake:

- Develop and promote subsidized weather-index insurance tailored to the needs of smallholder farmers.
- Establish government-backed credit guarantee schemes to encourage financial institutions to offer low-interest loans to farmers.
- Encourage microfinance institutions and cooperatives to offer flexible repayment terms suited to the farming cycle.
- Improve awareness of available insurance and credit services through farmer cooperatives and agricultural extension officers.

Facilitating Structured Market Participation

The study found that farmers often rely on informal markets, which exposes them to price fluctuations and low profits. To strengthen market access:

- Improve farmer access to structured markets such as the Zambia Agricultural Commodity Exchange (ZAMACE) through training and awareness campaigns.
- Enhance rural transportation and storage facilities to reduce post-harvest losses and increase bargaining power.
- Encourage collective marketing through cooperatives to enable smallholder farmers to negotiate better prices and reduce transaction costs.

  Introduce digital trading platforms that connect farmers directly with buyers to enhance transparency and price stability.

Policy and Institutional Reforms

Effective policy implementation is necessary to support smallholder farmers in managing risks. The following policy interventions are recommended:

- Strengthen coordination between government agencies, financial institutions, and agricultural organizations to streamline policy implementation.
- Develop localized agricultural policies that address the specific challenges faced by soyabean farmers, rather than using a generalized approach.
- Provide tax incentives and grants for agribusinesses and financial institutions that offer affordable financial services and risk management tools to smallholder farmers.
- Monitor and evaluate the effectiveness of agricultural support programs to ensure continuous improvements and adjustments based on farmer needs.

Encouraging Private Sector Involvement

Private sector engagement is critical in improving agricultural financial services and market structures. To foster investment in smallholder agriculture:

- Develop public-private partnerships to fund agricultural insurance schemes and climate adaptation pr-

ograms.

- Encourage financial technology (FinTech) innovations to develop mobile-based financial services for farmers.
- Support agribusiness ventures that invest in value addition, processing, and export markets to create more demand for locally grown soyabeans.

Empowering Farmer Cooperatives and Associations

Farmer cooperatives play a vital role in improving access to credit, markets, and training. To strengthen these organizations:

- Provide capacity-building programs for cooperative leaders on financial management, governance, and market negotiations.
- Facilitate linkages between cooperatives and financial institutions to improve access to credit and insurance services.
- Promote information-sharing platforms where farmers can exchange knowledge on best agricultural and financial practices.

6. CONCLUSION

The study has provided a comprehensive analysis of the challenges faced by smallholder soyabean farmers in Chongwe District, Zambia, particularly concerning climate-related risks, financial exclusion, limited market access, and policy implementation gaps. The findings highlight the urgent need for integrated approaches to improve agricultural resilience, financial literacy, and structured market participation to ensure sustainable farming practices.

Climate variability emerged as a key challenge, significantly affecting productivity and income stability. The study underscored the necessity of adopting climate-smart agricultural practices, including drought-resistant crop varieties and irrigation systems, to mitigate weather-induced risks. However, financial constraints and inadequate extension services continue to hinder the adoption of these strategies.

Financial literacy and inclusion were also identified as major barriers to the uptake of financial risk management tools such as agricultural insurance and credit facilities. Many smallholder farmers lack the necessary knowledge and access to financial services that could help them manage risks effectively. Strengthening financial education, expanding rural banking infrastructure, and developing farmer-friendly financial products are essential for addressing these gaps.

The study further revealed that smallholder soyabean farmers continue to rely on informal market channels, exposing them to price volatility and unfair trade practices. Limited awareness and accessibility of structured commodity markets, such as the Zambia Agricultural Commodity Exchange (ZAMACE), prevent farmers from securing competitive prices for their produce. Enhancing rural transportation and storage infrastructure, as well as increasing farmer participation in structured markets, is critical for stabilizing income and ensuring long-term agricultural sustainability.

From a policy perspective, while several government initiatives exist to support smallholder farmers, implementation challenges such as bureaucratic inefficiencies and weak coordination among stakeholders have limited their impact. Effective policy reforms should focus on localized, crop-specific interventions and strengthening public-private partnerships to enhance service delivery.

Overall, this study contributes to the growing discourse on smallholder agricultural sustainability by providing evidence-based insights into the socio-economic and institutional barriers limiting farmer resilience. Addressing these challenges requires a multi-sectoral approach involving government agencies,

financial institutions, agribusinesses, and farmer cooperatives. By implementing targeted interventions in climate adaptation, financial literacy, structured market engagement, and policy support, smallholder soyabean farmers in Chongwe District can achieve greater economic stability and improved livelihoods. Moving forward, continuous research, monitoring, and evaluation of these interventions will be necessary to ensure lasting impact and adaptability to emerging agricultural challenges.

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