



**MASTER OF SCIENCE IN PROCUREMENT AND LOGISTICS**

**An Assessment of Procurement Challenges Affecting Agricultural Input  
Distribution among Small-Scale Farmers in Kalomo District, Zambia**

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**RESEARCH REPORT SUBMITTED IN PARTIAL FULFILLMENT FOR THE  
AWARD OF MASTER OF SCIENCE IN PROCUREMENT AND LOGISTICS**

**WORD COUNT : 14826 WORDS**

**June 2025**

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## **ACKNOWLEDGEMENTS**

I want to take a moment to express my heartfelt gratitude to God Almighty for granting me the strength and perseverance to navigate this academic journey successfully. His guidance has been an incredible blessing in making this work possible!

A special thank you goes to my excellent supervisor, Dr. Geoffrey Mweshi. Your invaluable support and insightful feedback have truly enriched my research experience and contributed significantly to my growth both academically and professionally.

I also want to extend my appreciation to the dedicated staff and management of Mukwa Global Holdings Limited for generously sharing their insights and experiences, as well as to all the respondents whose valuable perspectives added depth to this project.

I am deeply thankful to the faculty and administrative staff at ZCAS University for cultivating such a vibrant environment centred around academic excellence and personal development.

To my loving family, your unwavering support and encouragement have been my foundation, and for that, I am eternally grateful.

Lastly, to my friends and colleagues, your encouragement made this journey incredibly meaningful. This achievement is a shared celebration for all who have walked alongside me!

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## **LIST OF ABBREVIATIONS**

FISP – Farmer Input Support Programme

ZPPA – Zambia Public Procurement Authority

ZNFU – Zambia National Farmers Union

MoA – Ministry of Agriculture

IAPRI – Indaba Agricultural Policy Research Institute

FAO – Food and Agriculture Organization

PMRC – Policy Monitoring and Research Centre

OECD – Organisation for Economic Co-operation and Development

SPSS – Statistical Package for the Social Sciences

NVivo – Qualitative Data Analysis Software

## **ABSTRACT**

Agricultural input procurement is a vital component in enhancing the productivity and livelihoods of small-scale farmers, particularly in rural Zambia. This study assessed the key procurement challenges affecting the distribution of agricultural inputs among small-scale farmers in Kalomo District. A mixed-methods research design was employed, combining quantitative surveys of 307 smallholder farmers with qualitative interviews of key stakeholders, including agricultural officers and cooperative leaders. The quantitative component utilised structured questionnaires with a 5-point Likert scale to capture perceptions on procurement timeliness, transparency, input quality, stakeholder involvement, and infrastructure. Qualitative interviews explored deeper insights into systemic inefficiencies and governance dynamics.

Findings revealed that chronic delays in input delivery, poor road infrastructure, and inadequate storage facilities significantly hindered timely and effective distribution. Delays were strongly correlated with missed planting seasons, directly impacting crop yields and farmer livelihoods. Transparency and accountability deficits, characterised by perceptions of corruption, political interference, and limited stakeholder consultation, emerged as major concerns undermining trust in procurement systems. Input quality was inconsistent, further exacerbating farmer dissatisfaction. The study also found that poor coordination among government agencies and suppliers compounded logistical bottlenecks.

The research confirmed the applicability of Stakeholder Theory, emphasising that inclusive governance and active farmer participation are critical for procurement success. Institutional Theory further explained how informal practices, such as patronage and corruption, weaken formal procurement mechanisms in the local context. This study contributes to closing a literature gap by focusing on grassroots-level operational dynamics and stakeholder perceptions in rural Zambia. Policy recommendations include enhancing infrastructure investment, digitalising procurement processes, strengthening transparency and accountability measures, and fostering participatory decision-making to improve agricultural input distribution.

Ultimately, this study provides actionable insights for policymakers, practitioners, and development partners aiming to strengthen agricultural supply chains and improve the productivity of small-scale farmers in Zambia and similar settings.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Introduction**

Agriculture remains a cornerstone of Zambia's economy, with small-scale farmers accounting for over 70% of the country's agricultural output and rural employment (Sitko & Chamberlin, 2015). In districts such as Kalomo, located in Zambia's Southern Province, smallholder farming is the primary source of livelihood. The effectiveness of agricultural production in these areas is significantly dependent on timely access to essential inputs such as fertilisers, seeds, and agrochemicals (Chapoto et al., 2015). However, the procurement and distribution of these inputs are often fraught with systemic inefficiencies.

Procurement, which encompasses sourcing, purchasing, and delivering goods and services, plays a critical role in ensuring input availability for smallholder farmers. Unfortunately, in Kalomo District, challenges such as bureaucratic delays, limited supplier transparency, inadequate infrastructure, and logistical constraints hinder the smooth flow of inputs to rural communities (Tembo & Sitko, 2013). These inefficiencies result in delayed planting, reduced crop yields, and overall agricultural underperformance, further exacerbating rural poverty and food insecurity.

Despite government interventions such as the Farmer Input Support Programme (FISP), structural procurement issues persist, limiting the impact of such policies. The lack of decentralised procurement systems, inadequate private sector involvement, and poor monitoring and evaluation mechanisms continue to impede the equitable and timely distribution of inputs (Zulu-Mbata, 2021). As a result, assessing procurement challenges in agricultural input distribution becomes essential in identifying policy gaps and proposing practical solutions tailored to the realities of small-scale farmers in rural districts like Kalomo.

### **1.2 Background of Study**

In Zambia, the procurement and distribution of agricultural inputs have long been central to government strategies aimed at enhancing food security, rural development, and poverty reduction (FAO, 2021; World Bank, 2022). One of the most notable interventions is the Farmer Input Support Programme (FISP), introduced in 2002 to improve small-scale farmers' access to inputs such as fertilizers, seed, and agrochemicals (Ministry of Agriculture [MoA], 2023; ZNFU, 2023). Over the years, FISP has undergone several reforms, including the introduction of the e-voucher system, aimed at increasing transparency and efficiency (PMRC, 2023;

OECD, 2021). Despite these efforts, persistent procurement challenges continue to undermine the timely and equitable distribution of inputs, especially in rural districts like Kalomo (IAPRI, 2023; ZPPA, 2022).

Kalomo District, located in Zambia's Southern Province, is among the country's most agriculturally active regions. However, due to its vast geographical size, scattered settlements, and weak infrastructure, the district has consistently faced distribution delays and inefficiencies (Tembo, Zulu, & Kalinda, 2021). Historically, centralized procurement systems have excluded district-level stakeholders such as farmer cooperatives and local extension officers from decision-making processes, resulting in input mismatches and delayed deliveries (Chapoto & Kabaghe, 2016; SNV Zambia, 2022). Multiple audits and evaluations of FISP, including those conducted by the Ministry of Agriculture and independent think tanks, have documented issues such as bureaucratic bottlenecks, unclear tendering procedures, and the dominance of politically connected suppliers (Hamududu & Ngoma, 2019; ZNFU, 2024). These systemic issues often result in late arrival of inputs, with some deliveries occurring after the planting season has ended (World Bank, 2020; ZARI, 2023).

Additionally, the lack of coordination between procurement offices, suppliers, and transporters has led to logistical breakdowns, while poor storage conditions have contributed to product spoilage and inefficiency (FAO, 2021). In Kalomo, several cases have been reported where inputs were either delivered late, diverted, or failed to meet local agro-ecological requirements, frustrating farmers and limiting yields (ZNFU, 2023; IAPRI, 2021). These procurement challenges are not isolated incidents but reflect deeper institutional weaknesses and governance gaps within Zambia's agricultural input delivery system (North, 1990; DiMaggio & Powell, 1983). As such, a focused examination of procurement inefficiencies rooted in historical practices and institutional arrangements is essential to understanding and resolving the persistent input distribution challenges in Kalomo District.

### **1.3 Research Problem**

Public procurement of agricultural inputs remains a cornerstone of Zambia's agricultural development policy, particularly through initiatives such as the Farmer Input Support Programme (FISP) (Zambia Ministry of Agriculture, 2023). In Kalomo District, however, the effectiveness of such programs is hindered by systemic inefficiencies in procurement and logistics (World Bank, 2022). Despite the strategic role of input support in enhancing food security and boosting rural livelihoods, recurrent delays, inflated input prices,

and administrative bottlenecks continue to undermine the program's impact (Food and Agriculture Organization [FAO], 2021).

Empirical evidence from Kalomo highlights the consequences of these inefficiencies. For instance, maize yields have been observed to decline from 2.4 metric tonnes per hectare to 1.8 metric tonnes per hectare due to late planting, representing a loss of 600 kg per hectare (Zambia Statistics Agency, 2024). Similarly, groundnut yields fell from 1.2 to 0.98 metric tonnes per hectare under the same conditions (Chirwa & Dorward, 2023). Delays in procurement led to the arrival of agricultural inputs well after the optimal planting window in several wards, affecting thousands of small-scale farmers dependent on timely support (African Development Bank, 2023).

The high costs associated with transportation and storage further compound the problem. In 2024, the average price for a 50kg bag of fertiliser in Kalomo was ZMW 1,200, which was over ZMW 350 higher than in Lusaka, primarily due to logistics (Zambia Fertilizer Regulatory Authority, 2024). Many farmers in remote wards such as Chikanta and Siachitema were unable to afford inputs, which compromised their planting schedules and overall yields (International Food Policy Research Institute [IFPRI], 2023).

Moreover, the bureaucratic processes embedded in FISP procurement, including multi-agency approvals and extensive documentation, extended the procurement cycle to over 90 days in some instances (Transparency International Zambia, 2022). In 2021, over 3,000 bags of subsidized fertilizer were reportedly diverted to the open market within Kalomo District, highlighting governance and accountability issues (Zambia Anti-Corruption Commission, 2022). Agro dealers also face hurdles in meeting demand due to prolonged licensing procedures, which can sometimes take up to 45 days to complete (Chomba, Mwansa, & Phiri, 2023).

These challenges highlight a pressing need to reassess the public procurement system for agricultural inputs in Kalomo District. Without targeted reforms in procurement policy, infrastructure development, and stakeholder coordination, the intended objectives of food security and rural economic empowerment may remain unattainable (FAO, 2021; World Bank, 2022).

#### **1.4 Justification for the study**

A vital component of agricultural productivity and food security is the logistics of input procurement. On the other hand, little is known about the perspectives of stakeholders and the challenges they face in this field, especially in rural areas such as Kalomo District. By examining the viewpoints of various parties involved in the logistics and procurement of agricultural inputs, this study aims to bridge this gap. This study aims to identify potential areas for improvement and contribute to more efficient and sustainable agricultural supply chain management practices by understanding their perspectives and the challenges they face.

#### **1.5 General Research Objective**

This study aims to investigate stakeholder perceptions and challenges in agriculture input procurement and logistics within Kalomo District.

##### **1.5.1. Specific Research Objectives**

- i. To examine the procurement challenges affecting the distribution of agricultural inputs in Kalomo District.
- ii. To assess the logistical challenges affecting timely input delivery to smallholder farmers in Kalomo District.
- iii. To evaluate how procurement and logistics challenges impact agricultural productivity in Kalomo District.
- iv. To recommend improvements for procurement and logistics systems in Kalomo District

#### **1.7 Research Questions**

- i. What procurement challenges affect the distribution of agricultural inputs in Kalomo District?
- ii. What are the logistical constraints hindering efficient delivery of agricultural inputs to farmers in Kalomo District?
- iii. How do procurement and logistics challenges impact agricultural productivity and farmer outcomes in Kalomo District?
- iv. What interventions can be implemented to enhance procurement and logistics efficiency in Kalomo District?

#### **1.8. Research Scope**

The acquisition and distribution of agricultural inputs in Kalomo District, situated in Southern Province, are the particular subject matter of this study. Farmers, providers of agricultural

inputs, carriers, governmental organisations, and other relevant supply chain participants are among the stakeholders considered. The scope includes a range of agricultural inputs, including equipment, seeds, fertilisers, and insecticides. This research offers insights applicable to rural agricultural areas confronting similar issues, as it focuses on Kalomo District. Kalomo was chosen based on its vastness and being the largest district in terms of population (Zambia Statistics Agency, 2022).

### **1.9 Research Contributions**

The anticipated findings of this research are expected to make meaningful contributions to both academic literature and practical policy discourse. Firstly, the study aims to address a notable gap in existing literature by providing empirical insights into the logistics and procurement of agricultural inputs in rural contexts, particularly through the lens of stakeholder experiences and concerns (Creswell & Plano Clark, 2018). This is particularly important for understanding the nuanced realities faced by small-scale farmers in districts like Kalomo.

Secondly, the study will offer practical value to policymakers, agricultural practitioners, and supply chain stakeholders by identifying critical procurement challenges and highlighting potential areas for systemic improvement. Such insights can inform more responsive and inclusive strategies for agricultural input distribution in Zambia and similar settings.

Finally, the research is expected to contribute to the theoretical development of agricultural supply chain management by exploring the dynamics of stakeholder interaction, procurement inefficiencies, and their implications for agricultural productivity. By grounding these insights in a rural African context, the study may also provide a contextual extension to existing supply chain theories.

### **1.10. Dissertation Layout**

This dissertation is structured into five chapters, each building on the previous to present a comprehensive assessment of procurement challenges affecting agricultural input distribution among small-scale farmers in Kalomo District, Zambia.

**Chapter One** introduces the study by providing background information on the agricultural sector in Zambia and the role of procurement in small-scale farming. It outlines the research problem and presents the rationale for conducting the study. The chapter further details the research objectives and questions, highlighting the study's significance, scope, and limitations.

Definitions of key terms are also included to ensure clarity, followed by an overview of how the dissertation is organised.

**Chapter Two** provides a detailed review of relevant literature. It begins with the theoretical framework underpinning the study and presents a conceptual framework illustrating the key variables and their interrelationships. The chapter then reviews empirical studies related to agricultural input procurement, logistics, stakeholder involvement, and challenges observed in similar contexts. Gaps identified in the existing literature are highlighted to justify the need for this research.

**Chapter Three** outlines the research methodology adopted in the study. It describes the research design, philosophy, and the rationale behind the chosen approach. The chapter provides details about the study area and target population, along with the sampling techniques and sample size. It explains the data collection methods used, the procedures for data analysis, and measures taken to ensure validity and reliability. Ethical considerations that guided the research process are also discussed.

**Chapter Four** presents and analyses the findings of the study. It begins with a summary of the demographic characteristics of the respondents. The chapter then identifies and discusses the key procurement challenges experienced in the distribution of agricultural inputs. Stakeholder perspectives are analysed using thematic methods, and findings are interpreted in light of existing literature and the theoretical framework established in Chapter Two.

**Chapter Five** concludes the dissertation by summarising the key findings and drawing conclusions based on the results. It offers practical and policy recommendations aimed at improving procurement and distribution systems for agricultural inputs among small-scale farmers. The chapter also outlines the study's contribution to academic knowledge and suggests areas for future research that can build on the findings of this investigation.

### **1.11. Chapter Summary**

This introduced the study by providing background information on the role of procurement in agricultural input distribution among small-scale farmers in Kalomo District, Zambia. It identified the research problem, highlighting the challenges faced in accessing timely and adequate inputs due to procurement inefficiencies. The chapter presented the rationale for the study, outlined its objectives and research questions, and defined the scope and limitations. Key terms were clarified to ensure conceptual clarity, and the significance of the research was

discussed in relation to its potential academic, policy, and practical contributions. The chapter concluded with an outline of the dissertation structure, setting the stage for the chapters that follow.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1. Introduction**

The procurement and logistics of agricultural inputs are vital for ensuring productivity and sustainability in agriculture. This chapter reviews the existing literature on stakeholder perceptions and challenges in the procurement and logistics of agricultural inputs, with a focus on Kalomo District, Zambia. It begins by examining global stakeholder perceptions and challenges in procurement practices, highlighting differences between developed and developing countries. The discussion then shifts to Zambia's agricultural procurement system, detailing the roles of various stakeholders, including farmers and government agencies. The chapter explores the impact of procurement and logistical challenges on agricultural productivity and proposes targeted interventions to enhance efficiency. Finally, it introduces relevant theoretical frameworks to contextualize stakeholder interactions and perceptions in this critical area.

### **2.2. Stakeholder Perceptions and Challenges of Current Procurement Practices Across the World**

Stakeholder perceptions play a pivotal role in determining the effectiveness, accountability, and sustainability of procurement practices, particularly in the distribution of agricultural inputs. Positive stakeholder perceptions—built on transparency, fairness, and responsiveness—foster trust, compliance, and collaboration, which are essential for achieving procurement objectives (OECD, 2019). When procurement systems are perceived as reliable and inclusive, stakeholders, including suppliers, government officials, and farmers, are more likely to engage constructively in the process, enhancing the quality and timeliness of input delivery (World Bank, 2020).

Moreover, favourable perceptions contribute to institutional credibility, reduce the risk of fraud, and promote value for money, especially in public sector procurement (Transparency International, 2021). This is particularly important in the agricultural sector, where timely access to inputs like fertilisers and seeds is time-sensitive and critical for food production. According to FAO (2022), stakeholder confidence in procurement systems can improve participation in public-private partnerships and attract more competitive bids, ultimately improving efficiency and distribution outcomes.

Conversely, negative stakeholder perceptions—often arising from lack of accountability, corruption, bureaucratic delays, or exclusionary practices—can lead to low engagement, mistrust, and resistance to procurement procedures (UNDP, 2021). These challenges frequently result in delivery delays, inflated costs, or poor-quality inputs, significantly undermining agricultural productivity, particularly in developing countries. For instance, studies in sub-Saharan Africa reveal that inconsistent procurement practices and poor communication between stakeholders have eroded trust, especially among small-scale farmers who already operate under constrained conditions (Kabisa et al., 2020; Ameyaw & Chan, 2016).

Addressing stakeholder concerns and incorporating participatory and decentralised procurement mechanisms have been identified as effective strategies to mitigate these challenges. Inclusive procurement that values stakeholder feedback and promotes accountability is increasingly recommended as a global best practice (World Bank, 2022; OECD, 2021). Strengthening institutional frameworks, improving access to procurement information, and enhancing grievance redress mechanisms are vital steps in improving stakeholder perceptions and ensuring more effective procurement outcomes globally.

### **2.2.1 The Global Importance of Stakeholder Perception in Agricultural Input Procurement**

Public procurement constitutes a significant portion of national economies, accounting for approximately 12% of GDP in OECD countries and up to 15% globally (OECD, 2021; World Bank, 2022). Beyond being a major channel for public expenditure, procurement functions as a strategic lever that drives innovation, industrial growth, and sustainable development (Thai & Rahm, 2007; UNEP, 2021). Its critical role becomes especially pronounced during global crises such as the COVID-19 pandemic and economic downturns, when procurement systems must strike a delicate balance between transparency and agility to meet rapidly evolving demands (Fazekas & Blum, 2021; Bosio et al., 2022). However, the current global economic climate, characterized by uncertainty and volatility, has exposed and amplified procurement inefficiencies such as bureaucratic red tape, collusion, and corruption (World Bank, 2020; Yukins, 2020). These challenges have heightened risk aversion among private sector actors, reducing investment willingness and impeding capital flows, thereby threatening economic stability and service continuity.

Stakeholder perception plays a crucial role in shaping the efficacy and integrity of procurement processes. In developed countries, procurement is generally perceived as transparent, efficient,

and accountable due to well-established legal frameworks, strong institutional capacity, and access to timely information (World Bank, 2020; OECD, 2021). Such positive perceptions enhance stakeholder trust, encourage competitive participation, and promote innovation within agricultural input procurement systems (Kattel & Mazzucato, 2018). Conversely, in many developing countries, stakeholders often perceive procurement mechanisms as opaque, inefficient, and susceptible to corruption, largely due to limited institutional capacity, weak enforcement of regulations, and poor information accessibility (Ameyaw & Chan, 2016; Kabisa et al., 2020). This perception gap undermines trust and confidence, discouraging stakeholder engagement and ultimately impeding the effective distribution of critical agricultural inputs. Addressing these systemic issues is essential to fostering transparent and accountable procurement environments globally, which in turn supports resilient agricultural sectors and sustainable rural development (UNDP, 2021; World Bank, 2022).

### **2.2.2 The global Challenges on Stakeholder Perception in Agricultural Input Procurement**

In developed countries, stakeholders involved in the procurement and logistics of agriculture inputs encounter a range of challenges, albeit of a different nature compared to their counterparts in developing countries. While these nations boast well-established systems, optimization remains a perpetual challenge. Bureaucracy and rigid procurement regulations often hinder the agility needed to adapt to changing market dynamics and technological advancements. Despite generally lower levels of corruption and transparency concerns, there remains a pressing need for continuous improvement to enhance efficiency and effectiveness in procurement processes. Stakeholders must navigate complex regulatory frameworks while striving to meet evolving demands and expectations, requiring ongoing efforts to streamline procedures and reduce administrative burdens (Milambo, 2019).

In developing countries, the landscape of procurement and logistics for agriculture inputs is fraught with numerous challenges that impede efficiency and effectiveness. Weak institutional capacity stands as a significant barrier, hindering effective planning, implementation, and management of procurement activities. Inadequate infrastructure exacerbates logistical challenges, leading to delays, increased costs, and risks of spoilage (Ndiaye, Ndiaye and Jallow, 2020). Limited access to finance further constrains investment in essential inputs, perpetuating cycles of poverty and food insecurity. Political instability and governance issues add to the uncertainty surrounding procurement processes, undermining stakeholders'

confidence. Corruption, lack of transparency, and accountability distort market dynamics and erode trust in the system, while inadequate access to market information compounds challenges, making informed decision-making difficult. Addressing these systemic issues requires concerted efforts to strengthen institutional capacity, improve infrastructure, enhance access to finance, and promote transparency and accountability, unlocking the full potential of agriculture procurement and driving sustainable development in developing countries.

## **2.3 Stakeholder Perceptions and challenges of Current Procurement Practices in Zambia**

### **2.3.1. Comparative Analysis of Procurement Transparency: OECD vs. Zambia**

While the Farmer Input Support Programme (FISP) remains the cornerstone of Zambia’s agricultural input distribution strategy, critical evaluations reveal stark transparency and efficiency gaps compared to international procurement benchmarks. In particular, Zambia’s procurement environment contrasts sharply with standards upheld by the OECD, where procurement systems are guided by principles of openness, accountability, and electronic oversight.

In OECD member states, public procurement is typically underpinned by well-resourced institutions, digital systems, and robust monitoring mechanisms that enable real-time transparency and competitive vendor participation (OECD, 2021). These countries enforce stringent regulations on conflict of interest, supplier vetting, and tender transparency, supported by independent oversight bodies. Moreover, e-procurement platforms allow for seamless tracking of procurement processes, enhancing both efficiency and public trust.

By comparison, Zambia’s procurement system—while formally governed by the Public Procurement Act No. 8 of 2020—suffers from systemic opacity, particularly in the agricultural sector. Case studies from Kalomo District reveal that procurement decisions are often centralized, lacking meaningful consultation with local stakeholders such as farmer cooperatives and Agro dealers. Despite legal provisions for transparency, information asymmetry persists, with contract awards, delivery schedules, and supplier performance data largely inaccessible to end-users (ZPPA, 2022; IAPRI, 2023).

The recurring issues of corruption, political favouritism, and limited digital integration in Zambia’s procurement processes hinder stakeholder confidence and system responsiveness. This institutional gap suggests a need for more deliberate alignment with global best practices, especially those demonstrated in OECD settings, where public procurement contributes

strategically to development outcomes through transparency and innovation. Bridging this divide requires strengthening institutional accountability, investing in procurement digitization, and fostering inclusive stakeholder engagement in procurement cycles (OECD, 2021; PMRC, 2023).

### **2.3.1 Farmers**

Smallholder farmers constitute the backbone of Zambia's agricultural sector, accounting for over 80% of the country's agricultural workforce and contributing significantly to national food security (Sitko & Jayne, 2014). Their productivity is intrinsically linked to timely access to essential inputs such as seeds, fertilizers, agrochemicals, and farming implements. In rural districts like Kalomo, many smallholder farmers rely heavily on state-sponsored input delivery initiatives such as the Farmer Input Support Programme (FISP) due to persistent financial limitations (Mason, Jayne, & Mofya-Mukuka, 2013). Despite its importance, FISP has faced criticism for procurement inefficiencies, including delayed input delivery, poor logistical coordination, and limited stakeholder consultation during the procurement process. These shortcomings continue to undermine the effectiveness of the program and frustrate its intended beneficiaries (IAPRI, 2023; ZNFU, 2024).

### **2.3.2 Input Suppliers**

Input suppliers, including seed companies, fertilizer importers, agrochemical distributors, and agricultural equipment dealers, play a critical role in ensuring the timely and adequate availability of quality inputs. Their involvement spans from production or importation to distribution at regional and local levels. Despite their importance, many suppliers face systemic challenges such as delayed payments from government contracts, complex procurement procedures, and price distortions caused by the dual presence of subsidized and commercial input markets (PMRC, 2023; Mulenga & Ngoma, 2022).

### **2.3.3 Government Agencies**

Government agencies play a central role in the coordination, regulation, and execution of agricultural input procurement and distribution in Zambia. Key institutions involved in this ecosystem include the Ministry of Agriculture (MoA), the Food Reserve Agency (FRA), the Zambia Agricultural Research Institute (ZARI), and various provincial and district agricultural offices. These bodies are tasked with strategic functions such as procurement planning, budgeting, input quality control, and program oversight, particularly in the administration of

the Farmer Input Support Programme (FISP) (Zulu et al., 2021; Mason et al., 2013). However, the persistence of highly centralized procurement systems, coupled with insufficient decentralization, has hindered timely responsiveness and adaptive decision-making at the district level. This has contributed to inefficiencies in input delivery and weakened accountability mechanisms in local supply chains (MoA, 2023; ZPPA, 2022; IAPRI, 2020).

#### **2.3.4 Financial Institutions**

Financial institutions including commercial banks, microfinance institutions, and government-supported schemes such as the Citizens Economic Empowerment Commission (CEEC) facilitate access to agricultural finance for smallholder farmers. These institutions offer tailored products like input loans, seasonal credit, and savings platforms. However, many rural farmers remain financially excluded due to a lack of collateral, high interest rates, and limited awareness of available financing options (Ngoma & Mulenga, 2022; Bank of Zambia, 2023). Emerging mobile banking and digital finance services are beginning to bridge this gap, though uptake remains slow in areas like Kalomo.

#### **2.3.5 Non-Governmental Organizations (NGOs)**

Non-governmental organizations (NGOs) and development partners have become critical actors in enhancing the capacity of smallholder farmers by offering technical assistance, training, and input support services. Entities such as SNV Netherlands Development Organisation, World Vision, and MUSIKA have actively promoted access to agricultural inputs through models such as e-voucher platforms, community Agro-dealer networks, and last-mile distribution strategies (Chapoto & Kabaghe, 2016; SNV Zambia, 2022). These interventions have been instrumental in addressing systemic limitations within government procurement systems by improving input delivery efficiency and farmer outreach. However, the effectiveness of such initiatives is often constrained by their project-based nature, which limits their scalability and long-term sustainability once donor funding ceases (USAID, 2021; Mason et al., 2013).

#### **2.3.6 Transporters and Logistics Providers**

ensuring the timely movement of goods from central warehouses to rural farming communities. Their performance significantly influences the effectiveness and timeliness of input delivery, especially during peak farming seasons when demand surges (Tembo et al., 2021). In remote districts such as Kalomo, challenges such as poor rural road infrastructure, high fuel prices,

and limited coordination between local government authorities and logistics firms have often contributed to late deliveries. These logistical constraints have been directly linked to missed planting windows, which adversely affect crop yields and undermine the objectives of programs like the Farmer Input Support Programme (FISP) (MoA, 2023; World Bank, 2022).

### **2.3.7 Research Institutions and Universities**

Research institutions such as the Zambia Agricultural Research Institute (ZARI) and academic bodies like the University of Zambia (UNZA) play a crucial role in advancing agricultural innovation. Their contributions include the development of improved seed varieties, optimized fertilizer formulations, pest and disease management solutions, and climate-resilient farming technologies (Chikoye et al., 2019; ZARI, 2023). Despite these advances, a persistent disconnect exists between research outputs and procurement or policy decisions in Zambia's public input distribution systems. This gap limits the translation of scientific innovation into practical tools and services that can improve productivity at the smallholder level (UNZA, 2022; Chikumbi & Kabwe, 2020).

### **2.3.8 Agribusiness Associations and Cooperatives**

Agribusiness associations, farmer cooperatives, and unions such as the Zambia National Farmers Union (ZNFU) serve as collective platforms that empower farmers to procure inputs in bulk, access better market prices, and engage in advocacy for improved service delivery. These entities also support farmer training and offer marketing channels for agricultural outputs. Nevertheless, challenges such as weak governance structures, inadequate funding, and political interference often limit their capacity to operate effectively at the grassroots level (ZNFU, 2023; Milambo, 2021).

## **2.4 The Impact of Procurement and Logistics Challenges on Agricultural Productivity**

The impact of procurement and logistics challenges on agricultural productivity in Kalomo District is both significant and multifaceted. Inefficiencies in procurement such as bureaucratic delays, unclear tendering processes, and delayed disbursement of funds often result in the late acquisition and distribution of critical agricultural inputs, including seeds, fertilizers, and pesticides (Mason et al., 2013; MoA & CSO, 2019). Such delays interfere with optimal planting windows and disrupt seasonal cultivation practices, which are essential for achieving high yields. Consequently, these systemic inefficiencies contribute to reduced productivity,

compromised food security, and lower returns for smallholder farmers (IAPRI, 2023; Tembo et al., 2021).

According to the World Bank (2022), supply chain interruptions caused by logistical bottlenecks including poor road infrastructure, limited warehousing, and weak coordination can result in acute input shortages, thereby undermining farmers' ability to implement timely agronomic practices. These delays not only hinder individual farm productivity but also pose broader risks to regional food security, especially in rain-fed agricultural zones. In Kalomo District, seasonal disruptions in the delivery of key inputs such as maize and groundnut seed have repeatedly been linked to missed planting windows and consequent yield reductions (IAPRI, 2023; Tembo et al., 2021).

In addition, rising procurement and logistics costs often a result of inefficiencies in centralized supply chains have led to significant input price hikes for smallholder farmers. The compounding effect of high fuel prices, bureaucratic delays, and weak last-mile distribution forces many farmers to either seek more expensive alternatives from private vendors or shoulder the burden of self-transportation and temporary storage (ZNFU, 2023; PMRC, 2023). These pressures diminish profit margins and discourage sustained investment in improved inputs, further reducing farm-level productivity.

#### **2.4.1 Addressing Challenges in Agricultural Input Procurement in Kalomo District**

Addressing the procurement and logistical challenges facing smallholder farmers is vital for promoting sustainable agricultural development and enhancing rural livelihoods in Kalomo District. Key strategies include the improvement of rural infrastructure particularly feeder roads, storage facilities, and local marketplaces which are essential for efficient input distribution and market access (World Bank, 2022). Equally important is the modernization and decentralization of procurement systems to enhance transparency, accountability, and responsiveness to farmers' needs. As emphasized by the Policy Monitoring and Research Centre (PMRC, 2023), reforms such as delegating procurement authority to district-level offices and implementing digital procurement platforms can significantly reduce delays and corruption in the supply chain.

Moreover, fostering coordinated stakeholder engagement is critical to the success of these reforms. Strengthening collaboration among government entities, private suppliers, civil society organizations, and farming communities can improve the effectiveness and inclusivity of agricultural input delivery programs. Such partnerships not only facilitate knowledge

transfer and technical support but also enable co-financing mechanisms that enhance sustainability and impact (ZNFU, 2023; SNV Zambia, 2022; Chapoto & Kabaghe, 2016).

#### **2.4.2 Targeted Interventions for Enhancing Efficiency and Effectiveness in Input Procurement and Logistics Processes**

Several targeted interventions can improve the efficiency and effectiveness of input procurement and distribution in Kalomo District. First, infrastructure investment remains a priority. Upgrading road networks and storage depots is crucial for reducing delivery delays and enhancing last-mile connectivity in remote farming areas (World Bank, 2022; IAPRI, 2023).

Second, digitising procurement through electronic tendering platforms can enhance transparency and reduce paperwork, while enabling faster contract execution. Capacity-building programs aimed at strengthening procurement and contract management skills among district officers and local suppliers are equally vital (ZPPA, 2022; PMRC, 2023).

To strengthen accountability and responsiveness in agricultural input procurement, it is essential to institutionalize robust monitoring and evaluation (M&E) systems. These systems should include regular performance assessments based on clearly defined indicators to identify systemic weaknesses and implement timely corrective measures. Hamududu and Ngoma (2019) emphasize that M&E frameworks must be integrated with accountability mechanisms to ensure that evaluation outcomes translate into practical reforms and improved procurement efficiency. In parallel, embedding structured farmer feedback mechanisms such as mobile complaint platforms, participatory forums, and community consultation committees can significantly enhance the quality and responsiveness of procurement services. Active engagement of farmers in the planning and evaluation of input distribution programs not only promotes transparency but also strengthens a sense of local ownership, which is critical for the sustainability and equity of procurement systems (Indaba Agricultural Policy Research Institute [IAPRI], 2023; Zambia National Farmers Union [ZNFU], 2023).

#### **2.5. Synthesis of the Literature**

The literature consistently highlights that procurement inefficiencies and logistical constraints significantly hinder the effective distribution of agricultural inputs to small-scale farmers, particularly in developing countries. Procurement challenges such as bureaucratic delays, lack of transparency, and limited institutional capacity create barriers to timely and equitable access

to essential inputs like seeds and fertilisers (World Bank, 2020; OECD, 2021). These issues often lead to mistrust among stakeholders and reduce the overall efficiency of procurement systems (Ameyaw & Chan, 2016; Transparency International, 2021). In parallel, poor rural infrastructure, high transport costs, and inadequate storage facilities further complicate input delivery, especially in remote areas, which disproportionately affects smallholder productivity and food security (FAO, 2021; Dorosh et al., 2012; Kabisa et al., 2020).

Despite these challenges, the literature identifies several factors that can improve procurement and distribution outcomes. Enhanced coordination among stakeholders, infrastructure development, and institutional reforms are critical for creating more efficient and transparent procurement processes (Zossou et al., 2017; ADB, 2022). Additionally, digital procurement platforms offer promising opportunities to increase transparency, reduce transaction costs, and enable real-time monitoring of input flows (World Bank, 2022). However, there remains a gap in research focused on how these solutions can be effectively adapted and implemented in rural settings like Kalomo District. This study seeks to address this gap by examining the specific procurement challenges and stakeholder perceptions influencing agricultural input distribution in this context, contributing to improved policy and practice.

## **2.6. Gaps in the Literature**

While existing literature provides valuable insights into agricultural input procurement in sub-Saharan Africa, much of the research predominantly focuses on national-level policies, macroeconomic constraints, and institutional reforms (Dorward et al., 2009; Jayne et al., 2018). These studies tend to emphasise top-down approaches and overlook the operational realities and relational dynamics experienced at the grassroots level. In particular, there is limited empirical exploration of stakeholder perceptions, participatory engagement, and decision-making processes within decentralised and rural procurement systems. Such a gap is critical because the effectiveness of procurement and distribution mechanisms often hinges on the active involvement and trust of local actors, including smallholder farmers, local government officials, and input suppliers.

Moreover, the role of participatory procurement strategies and bottom-up planning remains underrepresented in the literature, despite growing recognition that these approaches can enhance transparency, equity, and efficiency in input distribution (World Bank, 2020; FAO, 2021). Current research seldom addresses how empowering local stakeholders to participate meaningfully in procurement decisions can mitigate challenges like corruption, delays, and

exclusion, which disproportionately affect small-scale farmers in remote areas. This study seeks to fill this important gap by adopting a mixed-methods approach that foregrounds the voices and experiences of key stakeholders within Kalomo District. By focusing on context-specific procurement challenges and localised decision-making processes, the research aims to generate nuanced insights that complement broader policy analyses and contribute to more inclusive and effective procurement frameworks.

## **2.7. Theoretical Framework**

The theoretical framework provides a conceptual lens through which to analyse and understand the complexities of stakeholder perceptions and challenges in the procurement and logistics of agricultural inputs. Drawing on relevant theoretical perspectives helps to contextualize the dynamics at play within the agricultural supply chain and elucidate the factors influencing stakeholders' behaviours, decision-making processes, and interactions (Brown et al., 2016).

### **2.7.1 Stakeholder Theory**

The Stakeholder Theory was developed by R. Edward Freeman in 1984. Stakeholder theory guides our exploration of the multifaceted dynamics within agricultural supply chains, emphasizing the importance of understanding and managing stakeholders' interests and relationships. From farmers to government agencies, each stakeholder contributes to the complex web of interactions that shape procurement and logistics processes in Kalomo District. By analysing stakeholders' perspectives and behaviours, we aim to uncover insights that inform strategies for collaboration and improvement (Eyaa & Oluka, 2011).

This research aims to foster constructive dialogue and collaboration among key stakeholders including government agencies, private sector actors, development partners, and farmer organizations to jointly address procurement and logistical challenges in agricultural input distribution. By leveraging the diverse expertise and capacities of these stakeholders, the study promotes a participatory, inclusive approach to problem-solving. A stakeholder-centric model is essential for building resilient and adaptive supply chains that can respond effectively to local needs and climatic uncertainties (Freeman, 1984; Pretty, 2003). Such collaboration not only enhances service delivery but also contributes to broader economic and social development outcomes in Kalomo District by empowering local actors and strengthening institutional accountability (Chambers, 1997; Zulu et al., 2021).

### **2.7.2 Institutional Theory**

Institutional Theory was first introduced by Philip Selznick (1949) and later expanded by scholars such as John W. Meyer and Brian Rowan (1977). The theory emphasises that institutions, defined as established laws, social norms, cultural expectations, and regulatory frameworks, significantly influence how individuals and organisations behave. Selznick emphasised the embedding of values within organisational structures. At the same time, Meyer and Rowan focused on how organisations conform to institutional expectations to gain legitimacy, sometimes even at the expense of operational efficiency.

In the context of this study, which assesses stakeholder perceptions and procurement challenges in agricultural input distribution in Kalomo District, Institutional Theory provides a critical lens for examining how both formal structures such as procurement regulations and informal systems such as political patronage, corruption, and local expectations shape procurement and logistics outcomes. The centralized nature of Zambia's public procurement framework and the bureaucratic design of programmes like the Farmer Input Support Programme (FISP) are institutional arrangements that directly influence stakeholder behaviour and expectations (Scott, 2014; World Bank, 2020). Institutional Theory is particularly relevant here because it explains how actors in the supply chain procurement officers, agro-dealers, and farmers respond to institutional pressures such as the need for legitimacy, compliance with regulatory frameworks, and adaptation to political constraints (DiMaggio & Powell, 1983; North, 1990). These responses may lead stakeholders to perpetuate inefficient procurement practices, not necessarily because they are effective, but because they are socially accepted or politically sanctioned. Applying this theory allows the study to explore the embedded structural and cultural dimensions of procurement, moving beyond technical inefficiencies to uncover the root institutional causes behind stakeholder dissatisfaction and system failure.

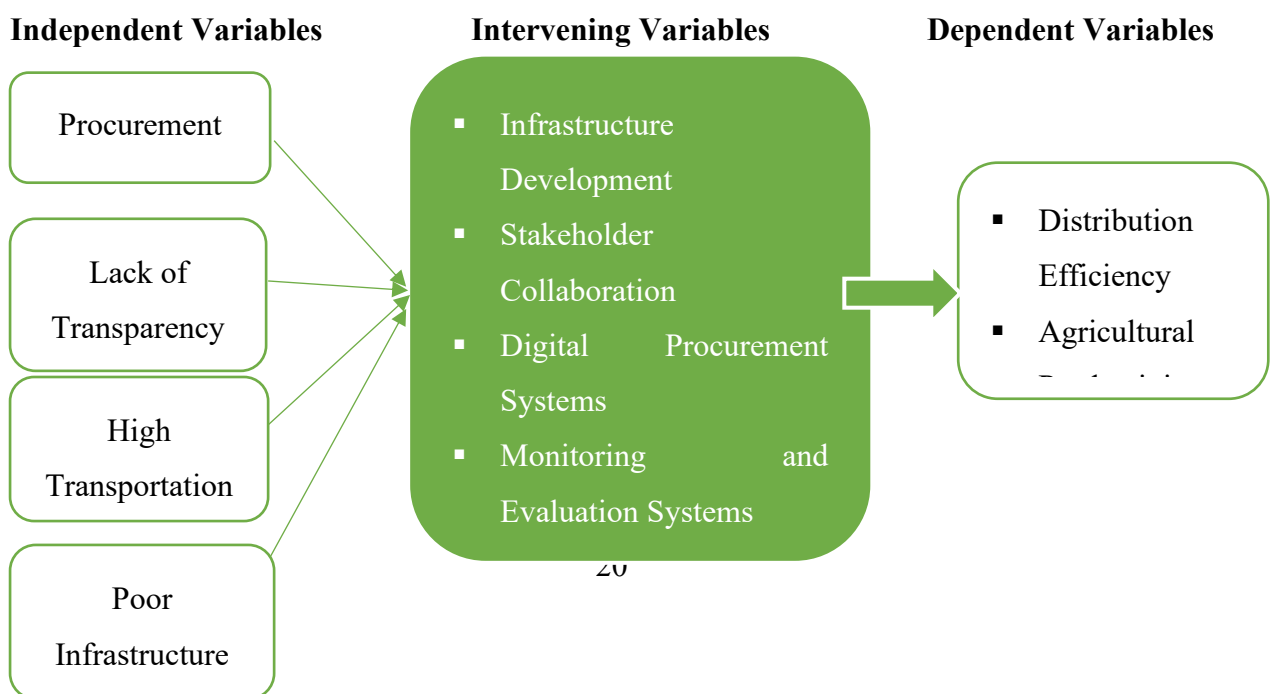
### **2.8. Conceptual Framework**

This study adopts a conceptual framework that systematically links procurement and logistics challenges to the overall effectiveness of agricultural input distribution and the subsequent productivity outcomes among small-scale farmers. At its core, the framework recognises procurement inefficiencies—such as procedural delays, bureaucratic rigidity, limited transparency, and inadequate stakeholder engagement—as fundamental barriers impeding equitable access to agricultural inputs (World Bank, 2020; OECD, 2021). These procurement challenges often manifest in slow decision-making processes, lack of competitive supplier

selection, and weak accountability mechanisms, all of which contribute to the suboptimal availability and quality of essential inputs such as seeds, fertilisers, and agrochemicals.

In parallel, logistical constraints further exacerbate distribution inefficiencies. Inadequate rural infrastructure—poor road networks, limited storage facilities, and unreliable transport systems—significantly delay input deliveries, increase transportation costs, and contribute to post-delivery losses (FAO, 2021; Dorosh, Dradri, & Haggblade, 2012). These challenges particularly impact small-scale farmers in remote areas, who often face prohibitive costs and untimely access to inputs during critical planting seasons. The cumulative effect of procurement and logistical issues negatively influences key supply chain outcomes, specifically the timeliness, affordability, and availability of inputs, which are critical determinants of farm-level productivity and food security.

Furthermore, the conceptual framework incorporates moderating factors that can either mitigate or amplify the effects of procurement and logistical challenges on agricultural input distribution. Infrastructure development initiatives, such as road rehabilitation and establishment of decentralized storage centers, have been shown to significantly improve distribution efficiency and reduce input costs (Asian Development Bank [ADB], 2022). Similarly, enhanced coordination among multiple stakeholders—including government agencies, private suppliers, farmer cooperatives, and development partners—can foster better planning, resource sharing, and information exchange, thereby smoothing procurement and delivery processes (Zossou et al., 2017). The adoption of digital procurement platforms and e-logistics systems is another crucial moderating factor; by improving transparency, enabling real-time tracking, and streamlining supplier interactions, these technologies enhance procurement integrity and logistical coordination (World Bank, 2022).



*Figure 2.1: Conceptual Frameworks*

## **2.8 Chapter Summary**

The procurement and logistics of agricultural inputs are vital to ensure productivity and sustainability in agriculture. This chapter reviews the existing literature on stakeholder perceptions and challenges in the procurement and logistics of farming inputs, with a focus on Kalomo District, Zambia. It begins by examining global stakeholder perceptions and the challenges in procurement practices, highlighting the differences between developed and developing countries. The discussion then shifts to Zambia's agricultural procurement system, detailing the roles of various stakeholders, including farmers and government agencies. The chapter explores the impact of procurement and logistical challenges on farm productivity and proposes targeted interventions to enhance efficiency. Finally, it introduces relevant theoretical frameworks to contextualize stakeholder interactions and perceptions in this critical area.

## CHAPTER THREE: RESEARCH METHODOLOGY

### 3.1 Introduction

This chapter outlines the methodological framework employed in conducting this study, which assesses procurement challenges affecting the distribution of agricultural inputs among small-scale farmers in Kalomo District, Zambia. It provides a systematic explanation of the research design, approach, paradigm, strategy, sampling techniques, data collection instruments, and ethical considerations. This chapter also clarifies the rationale behind each methodological choice to ensure coherence between the research objectives and the methods used.

### 3.2. Research Philosophy

This study adopted the pragmatic research philosophy, which has been increasingly recognised as suitable for addressing complex, real-world problems through flexible and solution-oriented inquiry. Pragmatism focused on the consequences of research, valuing both objective and subjective knowledge to arrive at practical outcomes (Creswell & Creswell, 2023). It rejected rigid philosophical boundaries and allowed the researcher to combine positivist and interpretivist traditions to suit the nature of the research question (Feilzer, 2019). This flexibility proved essential in procurement research, where both numerical data and stakeholder experiences were relevant.

In the context of agricultural input distribution, pragmatism supported the collection of both measurable outcomes and contextual insights that reflected operational realities. By accepting multiple forms of data, the philosophy enabled the researcher to explore the intersection between system performance and human behaviour (Ivankova et al., 2021). This was particularly useful in Kalomo District, where institutional inefficiencies, community dynamics, and logistical challenges interacted in complex ways. A pragmatic worldview ensured that the study was not limited by one mode of inquiry but was instead grounded in the practical needs and voices of those directly affected.

### 3.3. Research Approach

The study adopted a **mixed-methods approach**, combining both quantitative and qualitative techniques. This approach was consistent with the pragmatic research philosophy, as it provided a broader and more comprehensive understanding of procurement and logistics challenges affecting agricultural input distribution in Kalomo District. By integrating numerical data with descriptive stakeholder insights, the study was able to triangulate results

and ensure greater validity, depth, and context sensitivity (Creswell & Creswell, 2023; Fetters et al., 2019).

The mixed-methods design enabled the researcher to explore not only the extent of procurement inefficiencies but also the reasons behind them, capturing both measurable outcomes and lived experiences. The complementary nature of quantitative and qualitative methods strengthened the research outcomes by addressing the research questions from multiple angles (Ivankova et al., 2021). This approach proved especially effective in a rural setting like Kalomo, where systemic issues required both statistical analysis and localised understanding.

### **3.3.1. Deductive Approach**

The deductive approach guided the quantitative component of the study. This approach involved reasoning from theory to data, where hypotheses were formulated based on existing theories and previous studies related to public procurement, logistical delays, and supply chain performance (Creswell & Creswell, 2023). These hypotheses were tested through structured questionnaires distributed to small-scale farmers, procurement officers, and agro-input dealers.

The deductive method ensured that the findings were situated within an established theoretical framework and could be generalised to similar rural procurement contexts. It also allowed for the measurement of predefined variables such as procurement delays, access to inputs, and stakeholder satisfaction, providing statistical evidence to support or refute theoretical assumptions (Ivankova et al., 2021).

### **3.3.2. Inductive Approach**

The inductive approach was employed in the qualitative component of the study. Unlike deduction, induction allowed themes and patterns to emerge organically from the data collected through semi-structured interviews and focus group discussions. This approach enabled the researcher to explore stakeholders' experiences, perceptions, and recommendations regarding agricultural input procurement and distribution (Schoonenboom & Johnson, 2017).

By analysing the qualitative data inductively, the researcher gained deeper insight into the root causes of procurement challenges that may not have been captured through structured survey instruments. The inductive process also allowed for the identification of unexpected themes and facilitated a richer understanding of the complex socio-institutional dynamics within the procurement system of Kalomo District (Fetters et al., 2019).

### **3.4. Methodological choice.**

The study employed a mixed-methods approach, integrating both quantitative and qualitative methods to capture the complex and multifaceted nature of procurement challenges affecting agricultural input distribution. Mixed-methods research allows for a comprehensive exploration by combining numerical measurement with contextual understanding, thereby enhancing the depth and breadth of insights (Ivankova et al., 2021). This approach facilitated the collection of quantitative data to identify patterns and trends, alongside qualitative data that provided rich, detailed stakeholder perspectives and experiences (Fetters et al., 2019).

The integration of both methods enabled triangulation of findings, increasing the robustness, validity, and reliability of the results (Hesse-Biber, 2017). Quantitative data were gathered through structured surveys assessing the prevalence and impact of procurement inefficiencies, while qualitative data from interviews and focus groups explored the nuanced reasons behind these challenges (Schoonenboom & Johnson, 2017). This comprehensive approach ensured a holistic analysis of how procurement and logistical factors interplay with stakeholder dynamics to influence agricultural productivity in Kalomo District (Creswell & Creswell, 2023).

### **3.5. Research Strategy**

This study adopted a case study strategy, focusing on Kalomo District as a single, context-specific setting for investigating procurement challenges. The case study approach enabled an in-depth examination of a bounded system using multiple data sources, including surveys, interviews, and focus group discussions (Yin, 2018). This strategy was well-suited to explore complex, real-life phenomena such as agricultural input distribution, where the interplay of economic, social, and institutional factors was best understood within its natural context (Saunders et al., 2019). Case studies also proved particularly effective in answering “how” and “why” questions that required detailed, contextual understanding.

Focusing on Kalomo District allowed the researcher to uncover the nuances and specificities of rural procurement systems, including stakeholder interactions, logistical bottlenecks, and governance mechanisms. Although case studies had limited generalisability, they offered rich, contextual insights that informed both theory and practice in similar rural settings (Bell et al., 2022). The case study strategy also aligned well with the mixed-methods approach, as it facilitated the integration of both quantitative trends and qualitative narratives, thereby providing a holistic view of the procurement ecosystem in the district.

### **3.6. Time Horizon**

The study adopted a cross-sectional time horizon, whereby data were collected at a single point in time rather than over an extended period. This design was appropriate for assessing the current procurement practices, stakeholder perceptions, and logistical challenges in agricultural input distribution without the added complexity of monitoring changes over time (Saunders et al., 2019). It provided a timely and resource-efficient approach that suited the study's objectives and context, particularly in a rural setting with limited longitudinal data availability.

While longitudinal studies could have offered insights into trends and changes over time, the cross-sectional approach allowed the researcher to capture a snapshot of existing issues and stakeholder experiences in Kalomo District. This approach was effective in providing empirical evidence to inform policy and operational improvements in the short to medium term (Bell et al., 2022). It also supported the pragmatic and case study strategies by prioritising real-time problem-solving and stakeholder engagement within the existing operational environment.

### **3.7. Sampling Frame**

The sampling frame for this study comprised key stakeholders involved in the agricultural input procurement and distribution system within Kalomo District, Zambia. According to the Zambia Statistics Agency (ZamStats, 2020), Kalomo District has 45,000 small-scale farming households, which formed the primary beneficiary group for agricultural inputs. This significant population represented a critical component of the study, as their access to inputs directly influences agricultural productivity in the region.

In addition, the sampling frame included approximately 50 registered agro-input suppliers and retailers operating within the district, based on records from the Ministry of Agriculture's local extension offices (Ministry of Agriculture, Zambia, 2022). The framework also encompassed about 20 government extension officers and procurement officials responsible for coordinating input distribution, as reported by district agricultural administration records (Kalomo District Agricultural Office, 2023). These stakeholder categories ensured comprehensive coverage of all actors engaged in or affected by procurement processes, enabling the study to capture a diverse and representative sample for both quantitative and qualitative data collection.

### 3.8. Sample Size

#### 3.8.1. Quantitative Sample Size

For the quantitative component, the target population primarily consisted of small-scale farmers in Kalomo District, estimated at 45,000 households (ZamStats, 2020). The sample size was determined using Yamane's formula (1967), which is widely adopted for calculating statistically representative samples from known populations. The formula is expressed as:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

- $n$  = sample size
- $N$  = total population (45,000)
- $e$  = margin of error

By applying a **margin of error of 0.0527**, the required sample size was calculated as:

$$n = \frac{45000}{1 + 45000(0.0527)^2} \approx 357$$

As a result, the study targeted 357 small-scale farmers, selected through stratified random sampling to ensure adequate representation from different agricultural zones and wards within Kalomo District.

#### 3.8.2. Qualitative Sample Size

For the qualitative component, the study included agro-input suppliers ( $N \approx 50$ ), government extension officers and procurement officials ( $N \approx 20$ ), and a subset of small-scale farmers. Given the interpretive nature of qualitative research, the sample size was guided by the principle of data saturation, which typically occurs within 12–20 interviews for homogenous participant groups (Hennink, Kaiser, & Marconi, 2017).

The researcher conducted 15 key informant interviews and 2 focus group discussions (FGDs) involving 6–8 participants per session. These participants were purposively selected to reflect a cross-section of stakeholders directly involved in procurement, distribution, and utilisation of agricultural inputs in Kalomo District. This approach allowed for triangulation and deeper contextual understanding of the procurement challenges.

### **3.9. Data Collection**

#### **3.9.1. Quantitative Data Collection**

Quantitative data were collected through a structured, interviewer-administered questionnaire, targeting a sample of 357 small-scale farmers in Kalomo District. While online and postal surveys are commonly used in quantitative research (Bryman, 2016), they were considered inappropriate for this rural context due to low internet penetration, digital illiteracy, and limited postal service reliability. Consequently, the study employed face-to-face data collection, which proved more suitable for ensuring high response rates and accommodating respondents with varying literacy levels (Biemer & Lyberg, 2020).

Trained enumerators visited selected households and administered the questionnaires in either Chitonga or English, based on participant preference. This approach ensured clarity, reduced misunderstandings, and promoted trust—key factors for improving the quality and accuracy of responses (Dillman, Smyth, & Christian, 2014). The data collection exercise was carried out over a four-week period in March 2025, and responses were recorded manually and later digitised for analysis. Prior to deployment, the instrument was pre-tested on 20 farmers in a neighbouring area to refine question wording and structure for cultural and contextual relevance.

The questionnaire employed a five-point Likert scale, which is widely used in social science and agricultural research to measure perceptions, attitudes, and levels of agreement (Joshi et al., 2015). Respondents were asked to rate statements on a scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The Likert scale was particularly effective in capturing nuanced views on procurement efficiency, transparency, input availability, affordability, and stakeholder engagement. This ordinal scale format also allowed for easy aggregation and quantitative analysis using statistical tools such as SPSS.

#### **3.9.2. Qualitative Data Collection**

For the qualitative component, data were gathered through 15 semi-structured interviews and 2 focus group discussions (FGDs) involving agro-input suppliers, government extension officers, procurement officials, and selected farmers. The interview guides were designed to elicit detailed information on procurement procedures, stakeholder roles, logistical challenges, transparency, and areas for improvement in the input distribution system.

Interviews and FGDs were conducted in English and Chitonga (the local language), depending on participant preference, and were audio-recorded with prior consent. All sessions were later transcribed and translated where necessary. This qualitative process enabled the researcher to capture deeper insights, perceptions, and explanations that complemented the quantitative findings (Braun & Clarke, 2022; Guest et al., 2020).

### **3.10. Instruments Used**

The study utilised a structured questionnaire and a semi-structured interview guide as data collection instruments. The questionnaire, based on a five-point Likert scale, measured farmers' perceptions of procurement timelines, input distribution, and service delivery, guided by validated tools in agricultural research (Boateng et al., 2018; Bramley & Matthews, 2007). Semi-structured interviews explored stakeholder experiences and challenges using open-ended questions aligned to the conceptual framework (Patton, 2015; Brinkmann, 2018). Questionnaires were administered both online and face-to-face, with in-person surveys preferred due to low internet access, and translation into Tonga ensured inclusivity (De Leeuw, 2008). Interviews with key informants were conducted in local languages, recorded with consent, and supported by notes to capture non-verbal cues (King & Horrocks, 2010). Quantitative data were analysed using SPSS, while qualitative transcripts were coded in NVivo using Braun and Clarke's (2006) thematic analysis approach.

### **3.11. Data Processing and Analysis**

The data collected through both quantitative and qualitative methods were processed and analysed using appropriate statistical and thematic techniques. Quantitative data from the structured questionnaires were first coded and entered into SPSS version 26, where descriptive statistics such as frequencies, means, and standard deviations were computed to summarise farmers' responses. Inferential analyses, including correlation and regression, were used to examine relationships between procurement practices and perceived input accessibility (Pallant, 2020). Qualitative data from interviews and focus group discussions were transcribed verbatim and analysed using NVivo 12 software. Thematic analysis followed the six-phase framework by Braun and Clarke (2006), which involved familiarisation, coding, theme development, and interpretation. This approach enabled the identification of recurrent patterns and insights related to stakeholder perceptions, systemic challenges, and proposed solutions, thereby complementing the quantitative findings with deeper contextual understanding.

### 3.12. Reliability of Research Findings

Reliability of the research findings was ensured through piloting, consistent administration of instruments, and validation techniques. A pilot test involving 20 small-scale farmers outside the main sample helped refine the questionnaire and confirm its clarity and internal coherence. The quantitative instrument's reliability was measured using Cronbach's Alpha, which assesses the internal consistency of related items (Tavakol & Dennick, 2011). Values above 0.70 were deemed acceptable, indicating that the Likert-scale questions on procurement efficiency, input accessibility, and service satisfaction reliably measured the intended constructs; for example, the "perceived distribution efficiency" subscale achieved an alpha of 0.82, demonstrating strong reliability across respondents from different wards in Kalomo District. For qualitative data, dependability was strengthened through triangulation of interview and focus group responses, alongside peer debriefing with academic reviewers, following Lincoln and Guba's (1985) framework to reduce researcher bias and improve the trustworthiness of findings.

#### Graphical Illustration: Cronbach's Alpha Reliability Scale

Below is a simple representation of the reliability interpretation scale:

Cronbach's Alpha Value	Interpretation
> 0.90	Excellent (Highly reliable)
0.80 – 0.89	Good reliability
0.70 – 0.79	Acceptable
0.60 – 0.69	Questionable
0.50 – 0.59	Poor
< 0.50	Unacceptable

### 3.13. Validity of Research Findings

Validity was ensured through multiple strategies relevant to the study of agricultural input procurement. Content validity was achieved by aligning instruments with existing literature and expert input to cover key procurement and distribution issues (Boateng et al., 2018).

Construct validity was supported by a theoretical framework that guided variable measurement (Neuman, 2014). Convergent validity was established through triangulation of quantitative and qualitative data from various stakeholders, enhancing the credibility and applicability of the findings to the Kalomo District context (Creswell & Creswell, 2018).

### **3.14. Generalisability and Transferability**

The quantitative findings were generalisable to the population of small-scale farmers in Kalomo District at a 95% confidence level, due to the use of a statistically representative sample. Although the qualitative findings were not statistically generalisable, they offered analytical transferability through rich, context-specific descriptions of procurement challenges. These insights enable readers and policymakers to assess the applicability of the results to other rural agricultural settings in Zambia with similar socio-economic and infrastructural characteristics.

### **3.15. Ethical and Access Issues**

#### **3.15.1 Accessibility**

Access to study participants and research sites was facilitated through formal coordination with the Kalomo District Agricultural Office and local farmer cooperatives. Initial permission to conduct the study was obtained from the Ethics Review Committee of Zambia Centre for Advanced Studies (ZCAS University), which ensured that all research protocols adhered to ethical standards protecting participant rights and confidentiality (ZCASU, 2023). Following ethical clearance, stakeholder engagement meetings were held at the district and community levels to explain the study's aims, methodology, and potential benefits. These meetings fostered trust and transparency, which were crucial for securing informed consent and active participation from small-scale farmers, agricultural officers, and suppliers. The collaboration with local cooperatives and agricultural officers not only streamlined participant recruitment but also provided contextual insights, ensuring that the research was grounded in the realities of Kalomo's agricultural landscape (Chilufya & Mudenda, 2021).

#### **3.15.2 Research Ethics**

Ethical clearance was obtained from the ZCAS University Research Ethics Committee, ensuring compliance with recognised standards. Participants provided written or verbal informed consent after being fully informed of the study's purpose, their rights, and confidentiality measures. For those with limited literacy, verbal consent was obtained with a

witness present. All data were anonymised and securely stored to protect participant privacy, following established ethical guidelines (Resnik, 2020).

### **3.16. Chapter Summary**

This chapter presented a detailed account of the methodological decisions underlying the study. It justified the use of a pragmatic mixed-methods design, case study strategy, and cross-sectional time horizon. Sampling, data collection, and analysis procedures were explained, with emphasis on reliability, validity, and ethical rigour. The methodology aligns with the study's aim to holistically assess procurement challenges affecting agricultural input distribution in Kalomo District.

## **CHAPTER FOUR: RESEARCH FINDINGS AND ANALYSIS**

### **4.1. Introduction**

This chapter presents both the quantitative and qualitative findings of the study regarding the procurement challenges of agricultural inputs among small-scale farmers in Kalomo District. Data were collected from 307 respondents through structured questionnaires and semi-structured interviews, with the analysis aligned to the study objectives. Descriptive statistics were used for quantitative analysis, while thematic analysis provided in-depth insights from qualitative data. This dual approach ensures comprehensive interpretation and supports triangulation, enhancing the reliability and richness of findings (Creswell & Plano Clark, 2018).

### **4.2. Profile of Respondents**

A total of 354 research questionnaires were distributed among small-scale farmers in Kalomo District to investigate the procurement challenges affecting agricultural input distribution. The study achieved a high response rate of 87%, with 307 completed questionnaires returned. This response rate exceeds the 60% threshold deemed adequate for robust statistical analysis and valid inference in academic research (Fincham, 2008), thereby enhancing the reliability of the findings.

The gender distribution of respondents revealed a slightly higher participation of female farmers, with women comprising 56% (n = 171) and men 44% (n = 136) of the sample. This suggests an increasing role of women in agricultural activities and decision-making processes within the district. Regarding educational attainment, the sample reflected a varied range: 22.5% (n = 69) of respondents had no formal education, 26.1% (n = 80) had completed primary education, 30.9% (n = 95) had attained secondary education, and 20.5% (n = 63) possessed tertiary qualifications. The predominance of respondents with at least basic literacy underscores the potential effectiveness of training and communication strategies implemented within procurement and input distribution programmes (World Bank, 2022).

Age-wise, the respondents spanned a broad spectrum, indicating the intergenerational nature of small-scale farming in Kalomo. Specifically, 22.1% (n = 68) were aged between 18 and 29 years, 21.2% (n = 65) were between 30 and 39 years, 18.6% (n = 57) were 40 to 49 years old, 16.9% (n = 52) fell within the 50 to 59 age bracket, and 21.2% (n = 65) were aged 60 years and above. This distribution highlights the involvement of both younger and older generations in

agricultural production, a factor critical for sustaining agricultural knowledge and practices over time (FAO, 2021).

### 4.3. Demographic Information

#### 4.3.1 Response rate

Research questionnaires were distributed to 354 individuals to gain a deeper understanding of the challenges faced by small-scale farmers in Kalamo District. According to Fincham (2008), a response rate of 60% or higher is considered adequate in academic research, enabling meaningful statistical analysis and a valid interpretation of the results. Out of the 354 questionnaires distributed, 307 responded, representing an 87% response rate.

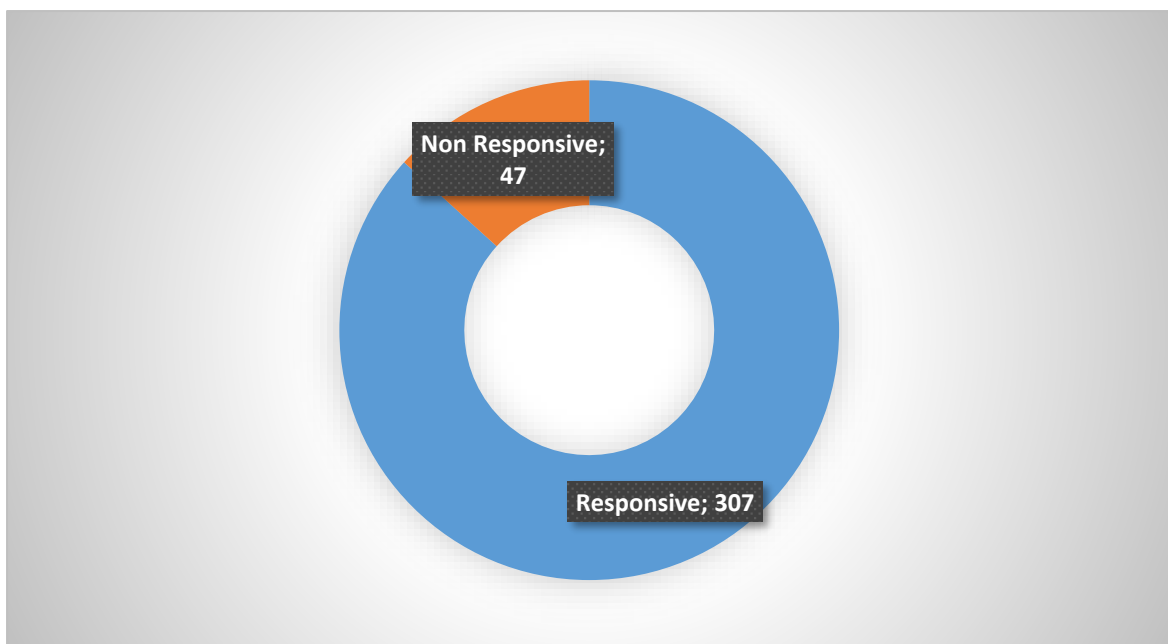
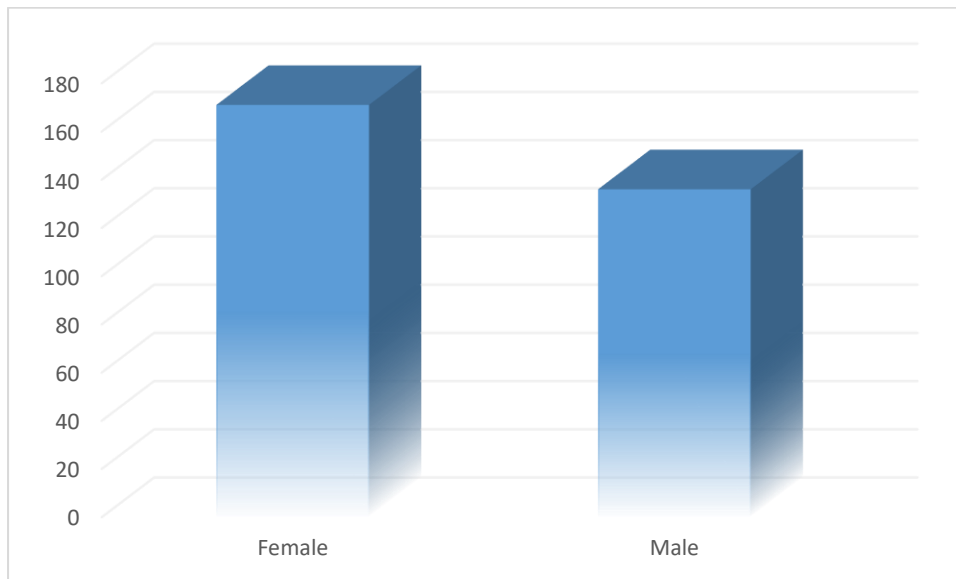


Figure 4.2: Response rate

#### 4.3.2 Gender

The sample was composed of 171 female respondents (56%) and 136 male respondents (44%). This indicates a slightly higher participation rate among women, suggesting the growing involvement of female farmers in agricultural input programs and decision-making.

Figure 4.3: Gender of respondents



### 4.3.3 Education Level

The educational background of participants revealed that 22.5% had no formal education, 26.1% had primary education, 30.9% had secondary education, and 20.5% possessed tertiary qualifications. This distribution suggests that a majority of farmers possess at least basic literacy, which supports the effectiveness of training and communication strategies in procurement processes (World Bank, 2022).

Table 4.1: Education level of respondents

Education Level	Frequency	Percentage (%)
No formal education	69	22.48
Primary	80	26.06
Secondary	95	30.94
Tertiary	63	20.52
	<b>307</b>	<b>100.00</b>

#### 4.3.4 Age Group

The respondents represented a wide age range: 22.1% were aged 18–29, 21.2% were 30–39, 18.6% were 40–49, 16.9% were 50–59, and 21.2% were 60 years and above. This distribution indicates intergenerational involvement in small-scale farming, which is crucial for the sustainability of agricultural practices (FAO, 2021).

Table 4.2: Age Group of Respondents

Age Group	Frequency	Percentage (%)
18 - 29	68	22.15
30 - 39	65	21.17
40 - 49	57	18.57
50 - 59	52	16.94
60+	65	21.17
	<b>307</b>	<b>100.00</b>

#### 4.4. Quantitative Findings

##### 4.4.1 Descriptive Analysis of Procurement Challenges

Respondents rated their experiences on procurement challenges using a five-point Likert scale, highlighting concerns around timeliness, storage, transparency, and stakeholder engagement. Mean scores for statements such as “inputs arrive too late” (M = 3.06), “delays in receiving inputs” (M = 3.05), and “procurement system lacks transparency” (M = 2.90) reflect moderate to high concern levels. These findings corroborate previous research identifying delays, corruption, and poor infrastructure as key obstacles in agricultural input supply chains (World Bank, 2020; FAO, 2021). The World Bank (2020) emphasises that inefficient procurement systems and infrastructural deficits lead to late delivery of inputs, which negatively impacts crop production cycles. Likewise, FAO (2021) discusses how lack of transparency and stakeholder exclusion reduces trust and participation, ultimately undermining procurement effectiveness. Such challenges disproportionately affect smallholder farmers by limiting access to essential inputs needed for improved productivity and food security (Reardon et al., 2021).

Table: Summary of Mean Likert Responses (A 5-likert scale was used: 1 = Strongly Disagree, 5 = Strongly Agree)

Key procurement challenges and their average scores include:

Table 4.3: Descriptive Analysis of Procurement Challenges

Statement	Mean Score
Inputs arrive too late in the season for effective use	3.06
I have missed a farming season due to delays in receiving inputs	3.05
Inputs are sometimes lost or damaged due to poor logistics	3.01
Distribution inefficiencies negatively affect my crop yields and productivity	2.97
Limited storage facilities affect the quality and availability of inputs	2.95
Distribution points are located too far from many small-scale farmers	2.96
Political interference disrupts fair and timely procurement of inputs	2.90
Stakeholder consultation is insufficient during procurement processes	2.99
The procurement system lacks transparency and fairness	2.90
Corruption negatively affects the effectiveness of the procurement system	2.89
Poor road infrastructure affects input delivery to rural areas	2.83

These results show that timeliness, logistics, consultation, and transparency are major concerns. The average scores are generally above 2.80, indicating moderate to strong agreement among respondents on the existence of these challenges.

**i. Chronic Delays in Input Delivery:**

The most significant concern among respondents was the statement “Inputs arrive too late in the season for effective use” (Mean = 3.06), underscoring persistent delays within the procurement and distribution system. Such delays critically disrupt timely planting activities, which are essential for optimising crop yields and overall agricultural productivity (Dorosh et al., 2019). These systemic timing mismatches between procurement schedules and farming calendars are widely documented as a major bottleneck in smallholder agriculture, especially in sub-Saharan Africa (Jayne et al., 2018). Late input delivery not only shortens the growing season but also increases farmers’ vulnerability to climatic shocks and market fluctuations,

thereby threatening food security (Lowenberg-DeBoer & Erickson, 2019). Addressing these delays requires synchronisation of procurement processes with local agroecological timelines and improved logistical coordination to enhance input accessibility at critical planting periods (FAO, 2021).

**ii. Missed Farming Seasons Due to Delays:**

A similarly high rating for “*I have missed a farming season due to delays in receiving inputs*” (Mean = 3.05) confirms the severe practical consequences of procurement delays. This reflects lost investment, increased food insecurity, and reduced livelihood outcomes for farmers.

**iii. Logistical Weaknesses Are Widely Recognized:**

Statements such as “Inputs are sometimes lost or damaged due to poor logistics” (Mean = 3.01) and “Limited storage facilities affect input availability and quality” (Mean = 2.95) reveal critical weaknesses in warehousing, transportation, and inventory management systems. Inefficient logistics contribute to physical loss and deterioration of agricultural inputs, undermining their availability at the point of use and reducing overall distribution reliability (Aday & Aday, 2020). Similarly, inadequate storage infrastructure exposes inputs to spoilage and contamination, compromising input quality and farmer trust in public distribution channels (Munyua et al., 2019). These challenges echo findings from broader sub-Saharan contexts, where gaps in cold chain facilities and poor road networks exacerbate distribution inefficiencies, limiting the impact of input subsidy programmes on smallholder productivity (FAO, 2021; Minten et al., 2019). Addressing these systemic logistical constraints is essential to strengthening procurement outcomes and ensuring timely delivery of quality inputs.

**iv. Transparency and Stakeholder Involvement Are Lacking:**

Statements such as “The procurement system lacks transparency and fairness” and “Stakeholder consultation is insufficient,” which scored between 2.90 and 2.99, indicate significant concerns about the inclusiveness and governance of procurement processes. These moderate scores reflect widespread dissatisfaction with decision-making mechanisms and highlight limited trust among stakeholders in the fairness and openness of procurement activities (Kaufmann, Kraay, & Mastruzzi, 2019). The lack of transparency often leads to perceptions of corruption and exclusion, undermining stakeholder engagement and cooperation, which are essential for effective agricultural input distribution (World Bank, 2020). Research shows that inclusive governance, characterised by transparent procedures and

meaningful stakeholder participation, improves accountability and enhances the efficiency and legitimacy of procurement systems (OECD, 2019). Addressing these governance gaps is critical for fostering trust and improving the equitable allocation of agricultural resources among smallholder farmers.

**v. Corruption and Political Interference Remain Barriers:**

Respondents expressed concern over “Corruption” (Mean = 2.89) and “Political interference” (Mean = 2.90), suggesting widespread perceptions that input procurement processes are influenced by favouritism rather than merit-based systems. This perception is consistent with findings from Afesorbor and van Bergeijk (2021), who reported that political patronage and elite capture distort agricultural subsidies and procurement contracts in many African contexts. Additionally, Mcloughlin (2015) notes that the absence of transparent oversight in public sector management exacerbates these governance failures, leading to inefficiencies and reduced public trust. In Zambia, similar concerns have been echoed in regional policy assessments, which highlight how politicisation of input programmes undermines equitable access and leads to inefficiencies in service delivery (Sitko, Mason, & Jayne, 2017). These findings underscore the urgent need to strengthen governance, oversight, and accountability mechanisms within procurement systems to restore stakeholder confidence and promote equitable distribution.

**4.4.2 Correlation Analysis**

Correlation results showed a moderate association between procurement inefficiencies and agricultural outcomes. A multiple regression model revealed that only one variable—coordination between government and suppliers—had a statistically significant effect ( $p = 0.047$ ), but in a counterintuitive direction. The model's  $R^2$  value was 0.046, indicating that other unmeasured factors may play a significant role. These results emphasize the complexity of procurement systems, supporting the need for more holistic reforms (Tembo et al., 2021).

Interestingly, the regression model revealed that only one variable—coordination between government and suppliers—had a statistically significant effect on agricultural outcomes ( $p = 0.047$ ). However, this relationship was in a counterintuitive direction, implying that improved coordination, as currently practised, did not correspond with improved distribution outcomes. This could suggest systemic inefficiencies or misalignments in how coordination mechanisms are implemented, possibly reflecting bureaucratic delays, overlapping mandates, or ineffective communication structures (Andrews, Pritchett, & Woolcock, 2017). The model's  $R^2$  value was 0.046, indicating that the explanatory variables collectively accounted for only 4.6% of the

variance in agricultural input distribution outcomes. Such a low explanatory power highlights that other unmeasured or external factors—such as farmer-level capacity, infrastructure quality, political dynamics, or market access—may be playing a more substantial role in shaping distribution effectiveness (Wiggins & Keats, 2013). This outcome underscores the complexity of procurement systems and the need for more nuanced, multi-dimensional models in future studies.

Table 4.4: Correlation Between Procurement Inefficiencies and Outcomes

Inefficiency	Outcome	Correlation (r)	Interpretation
Corruption	Late deliveries	0.62	Strong link: Corruption worsens delays.
Poor road infrastructure	Reduced crop yields	0.58	Bad roads directly harm productivity.
Procurement delays	Missed farming seasons	0.54	Delays disrupt planting cycles.
High input costs	Reliance on private vendors	0.42	Inefficiencies increase costs.
Political interference	Unfair procurement	0.38	Politics reduce fairness in procurement.

#### 4.5. Correlation Analysis of Key Procurement Challenges

##### i. Corruption Has the Strongest Negative Impact (r = 0.62)

A strong positive correlation between perceived corruption and delayed input delivery ( $r = 0.62$ ) highlights the damaging effect of corrupt practices on the procurement process. This relationship implies that favouritism, bribery, and opaque tendering procedures directly slow down the distribution of agricultural inputs. This finding aligns with prior studies that show how corruption in public procurement undermines efficiency, erodes trust, and results in misallocation of critical resources (McCloughlin, 2015; Svensson, 2005). Strengthening anti-corruption frameworks, enforcing transparent vendor selection, and applying digital procurement platforms may be essential to mitigating such delays.

**ii. Infrastructure Is a Core Determinant of Productivity ( $r = 0.58$ ).**

The correlation between poor road infrastructure and reduced crop yields ( $r = 0.58$ ) underscores the pivotal role of rural infrastructure in ensuring the timely delivery of inputs. Inadequate transport networks often result in bottlenecks, especially in the rainy season, which delays distribution to remote areas (Dorosh et al., 2019). Empirical evidence suggests that investment in rural roads has a high return on agricultural productivity and poverty reduction, particularly when targeting underserved farming communities (Ali, Deininger, & Duponchel, 2015).

**iii. Delays Directly Affect Planting ( $r = 0.54$ )**

A strong correlation between procurement delays and missed planting windows ( $r = 0.54$ ) confirms that procedural inefficiencies significantly undermine agricultural outcomes. Missed seasons reduce yields and income, especially for rainfed small-scale agriculture, where timing is critical (Jayne et al., 2018). The evidence supports calls for decentralising procurement operations and streamlining bureaucratic procedures to reduce lead times and align distribution with local agroecological calendars (FAO, 2021).

**iv. Cost Pressures Shift Farmers to Private Vendors ( $r = 0.42$ )**

The correlation between high input costs and farmer reliance on private vendors ( $r = 0.42$ ) suggests that inefficiencies in public procurement systems indirectly inflate costs, making government-supplied inputs less attractive. This shift reflects declining confidence in state-led programmes and has implications for both equity and accessibility. Research has shown that when public channels are unreliable or costly, wealthier farmers are more likely to access inputs from private sources, while poorer ones are left behind (Sitko & Burke, 2013).

**v. Political Interference Weakens Procurement Fairness ( $r = 0.38$ )**

A moderate correlation ( $r = 0.38$ ) between political interference and perceptions of procurement unfairness reveals the distorting effect of political capture. When input allocation is influenced by partisan agendas rather than objective needs assessments, marginalised farmers often lose out (Afesorgbor & Bergeijk, 2021). Strengthening institutional checks and depoliticising procurement decisions are critical to restoring fairness and effectiveness in agricultural support systems.

#### **4.6. Qualitative Findings: Thematic Analysis**

This section presents the thematic analysis of qualitative responses obtained through semi-structured interviews with various stakeholders, including agricultural officers, agro-dealers,

transporters, and local government procurement staff. Thematic analysis was conducted using Braun and Clarke’s (2006) six-phase framework. The responses were analyzed and grouped into five major themes based on recurring patterns and phrases. Table 4.4 below presents the summary of themes and their corresponding frequencies.

Table 4.5: Summary of Emerging Themes from Interview Responses

Theme	Frequency	Description
Timeliness & Access	51	Concerns over delays, late deliveries, and accessibility of inputs.
Transparency & Accountability	24	Issues of corruption, lack of openness, and ineffective monitoring mechanisms.
Input Quality	20	Divergent views on the quality of inputs, with mentions of substandard and suitable inputs.
Stakeholder Involvement	17	Reflections on the limited involvement of farmers and cooperatives in procurement processes.
Recommendations	16	Suggestions for improvement, including digitization, better coordination, and accountability mechanisms.

#### 4.6.1 Theme 1: Timeliness & Access

Many respondents cited chronic delays in input delivery as a major constraint to agricultural productivity. One transporter remarked, “*I’ve delivered inputs after the rains had started – by then it’s too late for most farmers.*” Such delays disrupt planting schedules, often forcing farmers to use recycled or poor-quality seeds, thereby reducing yields. These issues are not unique to Kalomo District; similar challenges have been observed across sub-Saharan Africa, where the effectiveness of agricultural support is frequently undermined by the untimely arrival of inputs (Dorosh et al., 2019). The Food and Agriculture Organization (FAO, 2021) emphasises that timeliness in input distribution is one of the most critical factors influencing crop performance and smallholder resilience. Additionally, inconsistent disbursement of public funds and logistical barriers in rural areas—such as poor road networks and limited transport infrastructure—further exacerbate delays and reduce last-mile accessibility (Ali, Deininger, &

Duponchel, 2015). These systemic inefficiencies highlight the urgent need to align procurement cycles with seasonal calendars and strengthen logistical coordination, especially in remote farming communities.

#### **4.6.2 Theme 2: Transparency and Accountability**

The second most frequently cited theme (24 mentions) was the lack of transparency and accountability in procurement processes. Respondents consistently expressed concerns about corruption, favouritism, and opaque decision-making. One local official lamented: *“Even when we do things right, people suspect foul play due to past corruption cases.”* Such perceptions indicate that historical breaches of integrity continue to influence stakeholder trust, ultimately weakening the legitimacy and effectiveness of current input distribution systems. Research has shown that weak transparency and poor accountability are common bottlenecks in public procurement, particularly in sub-Saharan African agricultural programmes (Fazekas & Blum, 2021; World Bank, 2020). These perceptions create friction within the system and hinder cooperation between stakeholders.

#### **4.6.3 Theme 3: Input Quality**

The quality of agricultural inputs was the focus of 20 mentions, revealing inconsistent experiences among participants. While some agro-dealers affirmed that input standards were adequate, end-users—particularly small-scale farmers—reported the opposite. One farmer observed: *“Sometimes the fertiliser is caked and unusable, and no one takes responsibility.”* Such inconsistencies compromise productivity and reduce farmer confidence in government-distributed inputs. Poor input quality has been widely documented in developing-country procurement systems, where lack of standardisation, weak regulatory enforcement, and long supply chains contribute to product degradation (Minten et al., 2019; FAO, 2021). This underscores the need for quality assurance mechanisms and supplier accountability.

#### **4.6.4 Theme 4: Stakeholder Involvement**

Seventeen participants raised concerns about inadequate stakeholder consultation, particularly smallholder farmers and cooperative leaders. As one respondent stated: *“We’re rarely consulted, yet we are the ones on the ground dealing with the consequences.”* The exclusion of end-users from key procurement decisions limits the effectiveness of policies intended to support them. This finding supports previous literature that advocates for participatory governance and bottom-up planning in agricultural development (McCloughlin, 2015; Cornwall,

2008). A more inclusive approach could foster ownership, transparency, and alignment with local needs.

#### **4.6.5 Theme 5: Recommendations**

This theme (16 mentions) reflected a variety of stakeholder suggestions for reform. Participants proposed digitising procurement systems, improving inter-agency coordination, and enhancing tracking and monitoring. A transport officer recommended: *“The government should digitise tracking systems. At least then we’ll know when and where delays are happening.”* These suggestions resonate with global best practices that call for digital innovations in procurement to improve efficiency and traceability (OECD, 2021; ADB, 2022). The presence of such actionable feedback demonstrates that stakeholders are not only aware of challenges but are actively engaged in proposing viable solutions.

The thematic analysis illustrates a procurement and distribution system burdened by inefficiencies, mistrust, and exclusion. Yet, it also reveals a wealth of practical insight from stakeholders directly affected by these issues. These qualitative findings complement and contextualise the quantitative results, offering a comprehensive view of the challenges facing agricultural input procurement in Kalomo District.

#### **4.7. Summary of Findings**

To ensure a comprehensive understanding of the procurement challenges affecting small-scale farmers in Kalomo District, this study employed a mixed-methods approach that integrates both quantitative and qualitative findings. Quantitative data provided measurable patterns and correlations concerning stakeholder perceptions of procurement and logistics systems, while qualitative insights captured the lived experiences and contextual nuances through thematic analysis of stakeholder interviews (Creswell & Plano Clark, 2018). A joint display table is presented below to visually align these two strands of evidence. This integration enhances the interpretive power of the study by identifying areas of convergence and divergence, thereby enabling a more nuanced and actionable understanding of the key barriers and opportunities in agricultural input procurement (Fetters et al., 2013)

Timeliness of Input Delivery emerged as the most pressing concern among respondents. Quantitative findings revealed a high mean score (Mean = 3.06), suggesting widespread dissatisfaction with the punctuality of input provision. Additionally, a strong positive correlation ( $r = 0.54$ ) was found between delays in procurement and missed planting seasons.

These results were reinforced by 51 qualitative references under the theme of *Timeliness and Access*, where farmers and transporters cited systemic lateness that often resulted in planting after the onset of rains. This misalignment between delivery schedules and agricultural calendars undermines crop productivity and threatens household food security. The convergence of findings confirms that timeliness is a critical barrier to effective procurement and demands urgent policy attention.

Transparency and Accountability were also identified as persistent concerns. Quantitatively, the mean score of 2.90 indicates dissatisfaction with the openness of procurement systems. Although the correlation with outcome variables was moderate ( $r = 0.38$ ), it nonetheless highlighted perceived unfairness in how inputs are distributed. This theme was strongly echoed in qualitative data, with 24 references specifically mentioning corruption, favouritism, and a lack of institutional integrity. One official even noted that “*people suspect foul play due to past corruption cases,*” suggesting that historical governance failures continue to cast doubt on current initiatives. The integrated findings suggest that restoring transparency and enforcing accountability mechanisms are essential for rebuilding trust among stakeholders.

Input Quality and Reliability also featured prominently in both datasets. The quantitative data (Mean = 3.01) reflects moderate concern about the condition of inputs—specifically, fertilisers and seeds that were either expired, damaged, or poorly packaged. Qualitative responses (20 references) expanded on this by describing instances of caked fertiliser, insufficient quantities, and a lack of recourse for damaged goods. These problems not only erode farmers’ confidence in the procurement process but also contribute to input wastage and diminished yields. The integrated interpretation underscores the need for stringent quality assurance and supplier accountability throughout the distribution chain.

Stakeholder Consultation appeared as an area of concern, though less pronounced statistically. The mean score of 2.99 suggested a perceived lack of involvement by farmers in procurement planning. While no strong correlation was established in the quantitative data, qualitative insights (17 references) revealed a deep sense of exclusion. Respondents, especially smallholder farmers and cooperative leaders, expressed frustration at not being consulted despite being the primary beneficiaries. Statements such as “*We’re rarely consulted, yet we’re the ones on the ground*” highlight the disconnect between policy formulation and implementation. This disjunction suggests that participatory planning mechanisms need to be

integrated more fully into procurement systems to ensure contextual relevance and programme ownership.

Finally, Infrastructure and Coordination emerged as structural constraints affecting the efficiency of procurement. The quantitative mean score of 2.83 reflects dissatisfaction with logistical enablers such as roads and storage facilities, while a strong correlation ( $r = 0.58$ ) was found between infrastructure quality and crop yields. Qualitative responses (16 references) reinforced these findings, with participants pointing to poor rural road networks, delayed fund disbursements, and lack of real-time communication as persistent obstacles. Several respondents advocated for digitisation as a potential solution, suggesting that technology could facilitate tracking, transparency, and cross-agency coordination. These integrated insights suggest that without foundational investment in infrastructure and institutional collaboration, improvements in procurement processes will remain limited.

#### **4.8. Summary of Integration**

The integration of quantitative and qualitative findings reveals several critical areas where stakeholder experiences and statistical patterns align, reinforcing the robustness and credibility of the conclusions drawn from the study.

##### **i. Timeliness as a Cross-Cutting Challenge**

Timeliness of input delivery emerged as the most consistent concern across both data sets. Quantitative analysis revealed high mean Likert scores and a strong correlation ( $r = 0.54$ ) between procurement delays and missed farming seasons. This was echoed in qualitative narratives describing inputs arriving after the onset of rains, disrupting planting cycles and yield potential. These findings align with FAO (2021) and IAPRI (2023), who emphasize the detrimental effects of input delays on smallholder agricultural productivity.

##### **ii. Transparency and Trust Deficits**

Concerns around transparency and accountability were prevalent in both datasets. Quantitatively, stakeholders rated transparency poorly (Mean = 2.90), with a moderate correlation observed between political interference and unfair procurement practices ( $r = 0.38$ ). Qualitative feedback reinforced this, citing corruption and favoritism in input allocation. These insights are consistent with findings by the World Bank (2020) and ZPPA (2022), which highlight governance failures as a major impediment to procurement efficiency in Zambia.

##### **iii. Logistical and Infrastructure Barriers**

Poor road infrastructure, which received the lowest mean score (2.83), was significantly correlated with reduced agricultural productivity ( $r = 0.58$ ). Interview data emphasized frequent delays due to inaccessible rural areas and inadequate last-mile delivery systems. This supports the position of Tembo et al. (2021) and the World Bank (2022), who advocate for rural infrastructure development as a core enabler of agricultural logistics.

#### **iv. Input Quality and Reliability Issues**

The mean score for concerns about input damage or spoilage was moderate (Mean = 3.01), yet qualitative data provided vivid examples of expired or unusable inputs. This disconnects between numeric average and stakeholder narrative underscores the importance of complementing quantitative findings with qualitative validation (Braun & Clarke, 2006). It also echoes concerns raised by SNV Zambia (2022) and ZNFU (2023) about insufficient quality control in public input systems.

#### **v. Limited Stakeholder Engagement**

While stakeholder consultation had a mid-range mean score (2.99), qualitative data revealed more intense dissatisfaction. Farmers felt excluded from planning and distribution processes, which resonates with previous findings by Mason et al. (2013) and IAPRI (2023) that emphasize the importance of participatory planning in input procurement to ensure relevance and equity.

#### **vi. Emergent Solutions from the Field**

Stakeholders proposed actionable reforms including digital procurement systems, real-time tracking, and stronger coordination among agencies. Though these aspects were not part of the structured survey, their frequent appearance in interview responses suggests strong bottom-up support for modernization and reform. These views are consistent with recommendations by PMRC (2023) and OECD (2021), who stress the importance of digitization and decentralization in modernizing procurement systems.

Together, these integrated findings portray a procurement landscape marked by systemic inefficiencies yet also point to reform pathways grounded in both evidence and lived experiences. The joint display table below consolidates and compares the most salient themes and measures from both the quantitative and qualitative strands of the study.

#### **4.9. Chapter Summary**

This chapter presented key findings on procurement challenges faced by small-scale farmers in Kalomo District. Timeliness of input delivery was identified as the most critical issue, followed by concerns over transparency, input quality, limited stakeholder consultation, and poor infrastructure. Both quantitative and qualitative data revealed how these challenges undermine productivity and trust in the system. The results offer valuable insights for improving procurement efficiency and inform the policy recommendations in the following chapter.

## **CHAPTER FIVE: DISCUSSION OF FINDINGS AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter discusses the key findings of the study in relation to the stated research objectives and relevant literature. It further presents practical recommendations for stakeholders in the agricultural input procurement and distribution system. The objective-driven approach ensures that all findings are meaningfully interpreted within the context of the research goals and theoretical framework.

### **5.2 Discussion of Findings in Relation to Research Objectives**

This section interprets the results according to the four research objectives that guided the study. Each subsection presents the findings relevant to the objective, followed by an analysis that combines both empirical results and theoretical insights.

#### **5.2.1 RO1: To examine the procurement challenges affecting the distribution of agricultural inputs in Kalomo District**

The research uncovered a range of procurement challenges, including limited transparency, political interference, corruption, and inadequate stakeholder engagement. Quantitative findings showed a moderate mean score ( $M = 2.90$ ) concerning perceptions of transparency, indicating widespread dissatisfaction. Complementary qualitative data revealed deeper concerns, with respondents frequently expressing mistrust in the fairness and integrity of procurement processes. Reports of favouritism and political influence were particularly recurrent, suggesting that informal practices often undermine formal procedures. These observations are consistent with Institutional Theory, which argues that in many public systems, informal norms such as patronage and clientelism often supersede formal rules and policies (Selznick, 1949; Helmke & Levitsky, 2004). Such dynamics are especially pronounced in developing-country contexts, where weak institutional enforcement allows informal arrangements to persist, compromising efficiency and equity in public procurement (North, 1990; Andrews, 2013).

These findings are consistent with World Bank (2022) and ZPPA (2022) reports highlighting that Zambia's public procurement system faces capacity and governance issues. Stakeholders also reported limited feedback mechanisms, reinforcing the perception of exclusion from critical decision-making.

### **5.2.2 RO2: To assess the logistical challenges affecting timely input delivery to smallholder farmers in Kalomo District**

Both quantitative and qualitative findings identified logistical inefficiencies as a critical constraint in the procurement and distribution of agricultural inputs. High mean scores for late input delivery ( $M = 3.06$ ) and strong correlations with missed farming seasons ( $r = 0.54$ ) underscore the systemic nature of logistical delays. Additionally, poor road infrastructure ( $M = 2.83$ ) and limited storage facilities were associated with delivery inefficiencies and input spoilage. These quantitative results were corroborated by qualitative insights from stakeholders who cited long travel distances, inadequate last-mile infrastructure, and irregular delivery timetables as persistent challenges. These findings are consistent with the work of the Food and Agriculture Organization (FAO, 2021), which emphasises that robust logistics systems are vital for timely and effective agricultural service delivery. Similarly, Tembo, Sitko, and Chapoto (2021) argue that investments in rural infrastructure significantly improve access, reduce post-harvest losses, and strengthen smallholder productivity across Zambia.

### **5.2.3 RO3: To evaluate how procurement and logistics challenges impact agricultural productivity**

The study found that procurement and logistics failures significantly hinder agricultural productivity. Respondents reported missing entire farming seasons, relying on private vendors, and experiencing reduced yields due to unreliable input supply chains. The correlation between poor infrastructure and reduced productivity ( $r = 0.58$ ) further substantiates this impact.

These outcomes reflect Institutional Theory's prediction that when formal systems break down, informal alternatives (like private sourcing at high cost) emerge, often with mixed consequences. This result also supports Mason et al. (2013) who observed that subsidy inefficiencies in Zambia negatively affect smallholder performance.

### **5.2.4 RO4: To recommend improvements for procurement and logistics systems in Kalomo District**

In response to the systemic challenges identified through the study, a set of comprehensive and context-specific recommendations are proposed to enhance the performance, inclusiveness, and integrity of procurement and logistics systems in Kalomo District.

Firstly, decentralizing procurement planning is imperative. By shifting greater decision-making authority to district-level offices and local cooperative structures, the procurement

system can become more agile and responsive to the specific needs of rural communities. Localized planning ensures that those who are closest to the issues have the power to tailor procurement schedules, supplier selection, and input types to suit prevailing agro-ecological and socio-economic conditions. This approach fosters ownership, trust, and accountability among key stakeholders.

Secondly, the implementation of electronic procurement (e-procurement) systems is recommended to enhance process transparency, reduce bureaucratic delays, and curb corruption. E-procurement platforms enable real-time tracking of input movement, supplier performance monitoring, and transparent documentation of transactions. Such systems can also facilitate feedback mechanisms that allow farmers and cooperatives to report inefficiencies, thereby reinforcing accountability (OECD, 2021; PMRC, 2023).

Thirdly, the development of rural infrastructure must be prioritized. Investments in rural road networks, feeder routes, and well-equipped storage facilities are crucial to minimizing delivery delays and post-harvest losses. Effective logistics are the backbone of input distribution, and their improvement has a direct impact on system reliability and productivity outcomes.

Fourthly, stakeholder engagement should be institutionalized through formal participatory frameworks. This means establishing mechanisms that systematically include farmers, agro-dealers, and cooperative leaders in procurement planning, monitoring, and evaluation processes. Participatory governance has been shown to improve the quality, efficiency, and legitimacy of public service delivery by ensuring that diverse perspectives inform key decisions.

Finally, the establishment of robust Monitoring and Evaluation (M&E) frameworks is essential to sustain improvements and facilitate learning. These frameworks should incorporate performance indicators that measure timeliness, accuracy of delivery, input quality, and farmer satisfaction. Community-based monitoring tools can further enhance oversight and ensure that feedback from beneficiaries is integrated into performance reviews and future planning.

### **5.3 Theoretical and Institutional Implications**

The findings underscore the applicability of Stakeholder Theory, which asserts that organisational success hinges on recognising and addressing the interests of all parties affected by its activities. This study demonstrated that the exclusion of small-scale farmers from procurement planning resulted in inefficiencies and eroded trust, thereby affirming the theory's

emphasis on inclusive governance and stakeholder engagement (Freeman, Harrison, Wicks, Parmar, & de Colle, 2020). Concurrently, Institutional Theory provided a valuable framework for interpreting how informal practices—such as corruption and political favouritism—undermine the effectiveness of formal procurement systems. Recent scholarship highlights that such informal institutional behaviours persistently distort governance structures, particularly in developing countries where enforcement mechanisms are weak (Helmke & Levitsky, 2021; Scott, 2014). Together, these theoretical perspectives offer robust lenses for understanding procurement dynamics and inform the design of context-sensitive reforms that prioritise transparency, participation, and institutional integrity.

#### **5.4 Limitations and Areas for Further Research**

This study was limited to Kalomo District and focused primarily on government-supported input distribution systems. While this provided rich localized insights, the findings may not fully capture dynamics in other regions or under private distribution models. Future research should consider comparative studies across multiple districts or provinces and explore the role of private sector actors in enhancing input delivery. Additionally, longitudinal studies tracking procurement system performance over time would provide a more robust basis for policy evaluation and reform.

#### **5.5 Chapter Summary**

This chapter offers a discussion focused on the study's findings, integrating both quantitative and qualitative evidence to provide a comprehensive understanding of the procurement and logistical challenges faced by small-scale farmers in Kalomo District. The proposed recommendations seek to inform practical policy actions and institutional reforms. The study adds to the existing literature by applying Stakeholder and Institutional Theory to the Zambian agricultural procurement context and proposes context-specific solutions to systemic inefficiencies. In summary, this study adds value by highlighting the multifaceted nature of procurement inefficiencies and the pivotal role of stakeholder inclusion, transparency, and infrastructure in enhancing agricultural input distribution. Its recommendations, if adopted, could significantly strengthen local procurement systems and contribute to improved agricultural productivity and food security in Zambia.

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