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Sustainably Growing Africa's Food Systems

FROM BOTTLENECKS TO GROWTH: POLICY AND MARKET ACCESS INTERVENTIONS FOR MAIZE, RICE, AND BEANS IN EASTERN UGANDA

CONDUCTED BY PSFU IN PARTNERSHIP WITH AGRA

AUGUST 2025

POLICY & MARKET ACCESS STUDY

2025 REPORT

Table of Content

List of tables

List of Figures

Acronyms and Abbreviations

Abbreviation	Term
AfCFTA	African Continental Free Trade Area
AGRA	Alliance for a Green Revolution in Africa
ASSP	Agriculture Sector Strategic Plan
BDS	Business Development Services
BMAU	Budget Monitoring and Accountability Unit
BYMV	Beans Yellow Mosaic Virus
CAADP	Comprehensive Africa Agriculture Development Programme
CSA	Climate-Smart Agriculture
DLGs	District Local Governments
DSIP	Development Strategy and Investment Plan
EAC	East African Community
EAGC	East African Grain Council
EPA	Economic Partnership Agreement
FAO	Food and Agriculture Organisation
FGD(s)	Focus Group Discussion(s)
GDP	Gross Domestic Product
GSP	Generalized System of Preferences
KALRO	Kenya Agricultural and Livestock Research Organization
KIIs	Key Informant Interviews
LTD	Limited
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MDAs	Ministries, Departments and Agencies
M&E	Monitoring and Evaluation
MFI	Micro Finance Institutions
MTIC	Ministry of Trade, Industry and Cooperatives
NAADS	National Agricultural Advisory Services
NAP	National Agriculture Policy
NASSEC	National Agriculture Sector Secretariat
NGO	Non-Governmental Organisation
NOAP	National Organic Agriculture Policy
NTBs	Non-Tariff Barriers
PPPs	Public–Private Partnerships
PSFU	Private Sector Foundation Uganda
SACCOs	Savings and Credit Cooperatives
SMEs	Small and Medium Enterprises
SPS	Sanitary and Phytosanitary
STR	Simplified Trade Regime
TGCU	The Grain Council of Uganda
UBOS	Uganda Bureau of Statistics
UCA	Uganda Cooperative Alliance
UE PB	Uganda Export Promotion Board
UNBS	Uganda National Bureau of Standards
UNDP	United Nations Development Programme
UNFF	Uganda National Farmers' Federation
URA	Uganda Revenue Authority
US	United States
VSLAs	Village Savings and Loan Associations
WHO	World Health Organization
WTO	World Trade Organization

Acknowledgements

On behalf of the Private Sector Foundation Uganda (PSFU), I take this opportunity to express our deep gratitude to all those who contributed to the successful completion of this **Policy and Market Access Study on Maize, Rice, and Beans in Eastern Uganda.** This report is the product of collective effort, collaboration, and commitment from a wide range of partners and stakeholders.

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Finally, we extend our sincere thanks to all stakeholders who, directly or indirectly, contributed their time, knowledge, and experience to this effort. This report is not only a research product but also a **reflection of our collective commitment to building a competitive, inclusive, and resilient grain sector that supports Uganda's agro-industrialization and regional trade ambitions.**

Foreword

77.3%

Persistent gaps that were revealed notably of farmers lacking training on contract laws highlighting low legal literacy and vulnerability to unfair agreements

It is with great honor that I present the **Policy and Market Access Study on Maize, Rice, and Beans in Eastern Uganda,** undertaken by the Private Sector Foundation Uganda (PSFU) in partnership with the **Alliance for a Green Revolution in Africa (AGRA).** This report comes at a decisive moment, when Uganda is intensifying efforts to consolidate agriculture's role in **inclusive growth, industrialization, and regional trade integration.**

Agriculture remains the backbone of Uganda's economy. It employs more than **70% of the population** and contributed **24.1% to GDP** in 2023/24. Within this sector, grains—particularly maize, rice, and beans—play a central role in food security, household incomes, and cross-border trade. Together, these crops are cultivated by over **7.7 million households:** maize by **3.5 million,** beans by **4.2 million,** and rice by a rapidly growing base of farmers in Eastern and Northern Uganda. Yet, despite this scale, these value chains continue to face persistent bottlenecks that undermine their full potential.

The findings of this study are revealing and sobering. Post-harvest losses remain alarmingly high—**30% for maize** and **25% for beans**—amounting to billions of shillings lost annually. Value addition remains minimal, with only **20.9% of actors** reporting access to processing equipment, leaving the majority to sell raw produce immediately after harvest. As a result, **58% of farmers** sell at the lowest market prices to meet urgent cash needs, and **64% report exploitation by middlemen.** Further, **77.3% of respondents** are unaware of laws governing grain trade, highlighting a serious gap in policy literacy and enforcement.

These realities expose a paradox: Eastern Uganda, a region endowed with fertile soils, favorable weather, and hardworking farmers, remains unable to fully harness its comparative advantage due to systemic challenges. Poor infrastructure, weak cooperatives,

counterfeit inputs, fragmented policies, and unfair trade practices continue to suppress competitiveness. Uganda loses an estimated **UGX 210 billion every year** to informal cross-border grain trade, while taxation and compliance burdens reduce profitability by **15–20%** for cooperatives and SMEs. Such inefficiencies directly undermine farmer incomes and the country's capacity to position itself as a grain hub in the East African Community (EAC) and under the African Continental Free Trade Area (AfCFTA).

Importantly, this report does not stop at diagnosing problems. It offers a clear roadmap for transformation. It calls for targeted **investment in rural infrastructure,** including roads, storage, and electrification, to reduce transaction costs and post-harvest losses. It recommends strengthening farmer **cooperatives and associations** to enhance aggregation, bargaining power, and structured trade. It emphasizes the need for **tailored financing models** that align with agricultural cycles and provide affordable credit to smallholders and SMEs. The report also highlights the urgency of expanding **digital platforms** for market intelligence, trade facilitation, and farmer sensitization. Equally critical is policy reform—harmonizing tax regimes, reducing non-tariff barriers, and ensuring stronger enforcement of standards to eliminate counterfeit inputs and build compliance with regional and global markets.

Above all, this study places **women, youth, and smallholder farmers** at the center of agricultural transformation. Their inclusion in finance, technology, and leadership is essential to ensure that growth is not only competitive but also inclusive and sustainable.

On behalf of PSFU, I extend sincere gratitude to **AGRA** for its financial and technical support, and to all stakeholders who provided insights during the study. This report is more than a research output—it is a **call to action.** If implemented with commitment and coordination, its recommendations will unlock the potential of Uganda's grain sector, create jobs, reduce food imports, and strengthen Uganda's position as a **regional grain hub.**

Together, let us turn bottlenecks into opportunities, and opportunities into sustained growth for Uganda.

Stephen Asiimwe

Chief Executive Officer
Private Sector Foundation Uganda (PSFU)

70%

The study revealed that Agriculture is still the backbone of Uganda's economy, employing over 70% of the population and contributed significantly towards rural livelihoods, exports and national food security

Executive Summary

This study provides a comprehensive analysis of the **maize, rice, and beans value chains in Eastern Uganda,** examining value addition, market access, stakeholder coordination, and policy-level challenges. Conducted across nine districts—Bukwo, Kween, Kapchorwa, Bulambuli, Sironko, Mbale, Namutumba, Bugiri, and Iganga—the research engaged **136 respondents** (114 surveys, 19 key informant interviews, and 3 focus group discussions). Actors included **farmers (60%),** cooperatives (20%), government officials (15%), and traders (5%).

Key Findings

i. **Value Addition:** Only **28%** of actors engage in value addition, mainly drying and threshing. Constraints include lack of equipment **(65%),** skills **(54%),** and finance **(49%).** Yet, **87%** expressed willingness to adopt higher-value processing if supported.

ii. **Market Access:** Post-harvest losses remain high—**30% for maize** and **25% for beans.** About **58%** of farmers sell immediately after harvest due to cash needs, and **64%** report exploitation by middlemen. Poor roads **(46%)** and limited storage **(42%)** further weaken competitiveness.

iii. **Collective Action & Governance:** Only **22%** of farmers belong to active cooperatives, and less than half of those are functional. Extension services reach just **43%,** while governance challenges and political interference undermine cooperative efficiency.

iv. **Policy & Regulatory Awareness:** **77.3%** of respondents were unaware of laws governing grain trade. Only **10%** reported frequently using legal or market information in decision-making. Unfair taxation and fragmented enforcement add to compliance burdens, with Uganda losing an estimated **UGX 210 billion annually** through informal cross-border trade.

v. **Infrastructure & Finance:** Just **36.8%** of respondents reported adequate transport capacity. Storage is widespread **(86.8%)** but mainly basic. Only **31.1%** reported access to capital, though **69.8%** identified credit as crucial for scaling operations.

Strategic Implications

The findings reveal systemic bottlenecks—weak infrastructure, limited access to finance, counterfeit inputs, poor coordination, and inadequate legal protection—that erode farmer incomes and reduce Uganda's competitiveness in domestic and regional markets. Seasonal price fluctuations also constrain profitability: for instance, maize prices drop from **UGX 1,020 off-peak** to **UGX 746 at peak,** while beans fall from **UGX 1,705 off-peak** to **UGX 1,145 at peak.**

Recommendations

To unlock growth and competitiveness, the study recommends:

i. **Policy & Regulation:** Strengthen legal literacy, harmonize regulations, and enforce quality standards at both national and district levels.

ii. **Infrastructure & Value Addition:** Invest in feeder roads, aggregation centers, and warehouse receipt systems. Expand access to modern processing hubs and subsidized equipment.

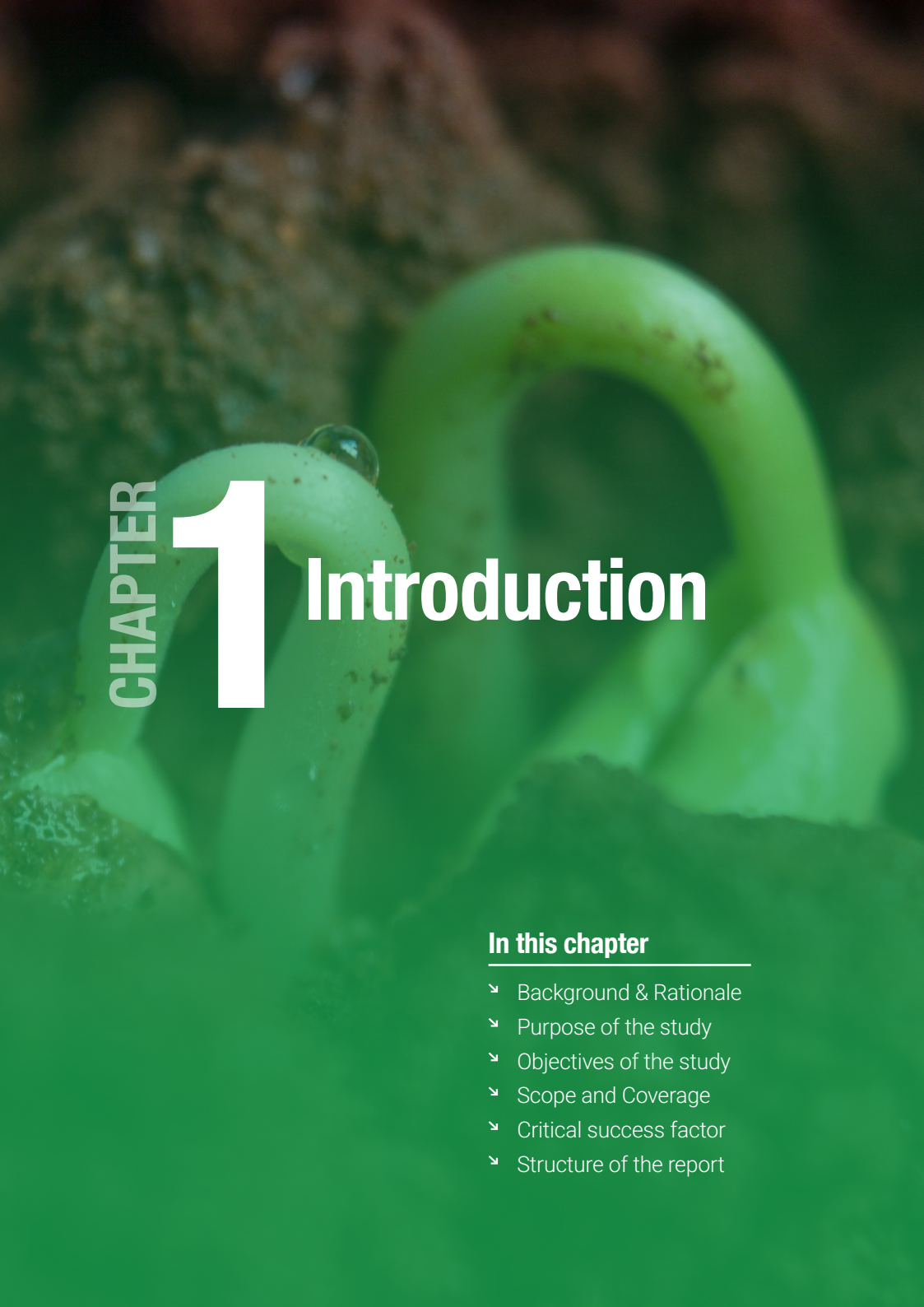
iii. **Finance & Institutions:** Expand tailored agribusiness financing through SACCOs, MFIs, and guarantee funds. Build governance and management capacity in cooperatives.

iv. **Digital & Market Systems:** Scale up mobile platforms for prices, weather, and regulatory alerts. Leverage extension workers and community radios to interpret and share market intelligence.

v. **Climate Resilience:** Reduce taxation on irrigation equipment, expand agricultural insurance, and promote climate-smart agriculture and soil testing.

Conclusion

By addressing policy gaps, strengthening institutions, and investing in infrastructure and value addition, Uganda can substantially reduce post-harvest losses, improve farmer incomes, and position Eastern Uganda as a competitive grain hub within the **EAC and AfCFTA frameworks.** Strategic reforms will not only raise productivity but also unlock billions in untapped market potential.



CHAPTER 1

Introduction

In this chapter

- Background & Rationale
- Purpose of the study
- Objectives of the study
- Scope and Coverage
- Critical success factor
- Structure of the report

INTRODUCTION

1.1 Background and Rationale

Agriculture remains the backbone of Uganda's economy, employing **over 70% of the population** and contributing **24.1% to GDP in 2023/24** (Uganda Bureau of Statistics [UBOS], 2024; World Bank, 2024). Within this sector, grains—particularly **maize, rice, and beans**—hold a central role in food security, household nutrition, income generation, and regional trade. These crops are the most widely grown staples across Uganda, with maize cultivated by more than 3.5 million households, beans by 4.2 million households, and rice increasingly expanding in Eastern and Northern Uganda due to favorable agro-ecological conditions (UBOS, 2024; Food and Agriculture Organization [FAO], 2023).

In Eastern Uganda, districts such as Mbale, Butaleja, Bugiri, Tororo, Budaka, Namutumba, Iganga, Bukwo, Kween, and Kapchorwa dominate the production of maize, rice, and beans. The region benefits from fertile soils, reliable rainfall, and a high concentration of smallholder farmers. However, despite their importance, the value chains of these crops remain underdeveloped and inefficient, limiting their potential contribution to Uganda's agricultural transformation (Private Sector Foundation Uganda [PSFU], 2025).

Key challenges persist across the production-to-market continuum. First, post-harvest losses remain high—estimated at 30% for maize and 25% for beans—due to inadequate storage, poor drying, and weak aggregation systems (FAO, 2023; UBOS, 2024). Second, value addition is minimal: only 20.9% of actors in Eastern Uganda reported access to value addition equipment, with most farmers selling raw grain immediately after harvest (PSFU, 2025). Third, market access is constrained by poor feeder roads, limited information systems, and reliance on exploitative middlemen—64% of farmers report being exploited by intermediaries, while 58% sell immediately after harvest due to urgent cash needs (PSFU, 2025).

At the policy and institutional level, gaps persist in legal awareness, regulatory enforcement, and coordination among agencies. A recent survey revealed that 77.3% of value chain actors in Eastern Uganda were unaware of any laws governing grain trade, underscoring weak dissemination of policy frameworks (PSFU, 2025). Furthermore, fragmented implementation of the National Grain Trade Policy (2015), limited investment in rural infrastructure, and inconsistent enforcement of quality standards have discouraged private investment in agro-processing and trade (Ministry of Trade, Industry and Cooperatives [MTIC], 2023; MAAIF, 2024).

Regionally, Uganda holds a comparative advantage within the East African Community (EAC) grain trade. However, non-tariff barriers, inconsistent quality standards, and competition from imports (particularly rice from Asia) undermine local competitiveness (East African Community [EAC], 2023). This challenge is compounded by climate variability, which continues to disrupt yields, and gender/youth exclusion, where women and young farmers face limited access to land, finance, and decision-making platforms (FAO, 2023).

Against this backdrop, there is urgent need for policy and market access interventions to transform the maize, rice, and beans value chains in Eastern Uganda. Strategic reforms—ranging from harmonizing grain policies, investing in rural infrastructure, strengthening

farmer cooperatives, expanding access to affordable finance, and scaling up value addition—are essential to unlock growth. By addressing systemic bottlenecks, Uganda can enhance its agricultural competitiveness, increase farmer incomes, reduce food imports, and position itself as a regional grain hub.

This study was therefore conceived to analyze existing policy bottlenecks, market access challenges, and stakeholder coordination gaps that constrain the maize, rice, and beans sectors in Eastern Uganda. Its rationale lies in providing evidence-based recommendations that inform government, private sector, and development partners in designing interventions that drive inclusive agricultural transformation and sustainable market growth.

1.2 Purpose of the Study

The purpose of this study was to generate evidence-based insights into the policy and market access challenges that constrained the maize, rice, and beans value chains in Eastern Uganda, and to propose practical interventions to unlock growth, competitiveness, and inclusivity. These three crops were strategic staples in Uganda's food system: maize was the most widely produced cereal, rice was a rapidly growing staple with increasing domestic demand, and beans served as the primary source of protein for most rural households. Together, they contributed significantly to national food security, rural employment, household incomes, and regional trade (UBOS, 2024; FAO, 2019).

Despite this centrality, the subsectors faced persistent policy, institutional, and market bottlenecks. According to UBOS (2024), over 62.3% of households in Uganda depended on agriculture, with Eastern Uganda contributing a substantial share of the country's grain production. Yet, productivity and profitability remained low. Post-harvest losses were estimated at 30% for maize and 25% for beans, driven by inadequate storage, poor handling, and limited processing capacity (World Bank, 2023; AGRA, 2023). Limited adoption of mechanization, weak enforcement of standards, and fragmented policy implementation further undermined competitiveness.

Market access inefficiencies compounded these challenges. Farmers frequently sold produce at harvest when prices were lowest, reflecting urgent liquidity needs and limited access to storage and credit. Regional studies indicated that reliance on informal middlemen reduced farm-gate prices by 15–25%, while weak farmer organizations hindered bargaining power and market aggregation (AGRA, 2023). In addition, low awareness of trade-related policies and regulations across grain actors curtailed compliance with quality standards, limiting access to structured national, East African Community (EAC), and African Continental Free Trade Area (AfCFTA) markets (World Bank, 2023).

This study was therefore designed to provide actionable knowledge for policymakers, private sector actors, and development partners to strengthen the maize, rice, and beans value chains in Eastern Uganda. By focusing on policy reform, market integration, and value addition, the study aligned with Uganda's broader goals of agro-industrialization under the National Development Plan IV (2025/26–2029/30) and the African Union's Comprehensive Africa Agriculture Development Programme (CAADP), which emphasized productivity growth, value chain competitiveness, and regional trade expansion.

1.3 Objectives of the Study

1.3.1 General Objective

The study aimed to examine the policy and market access challenges constraining the maize, rice, and beans value chains in Eastern Uganda, with a focus on identifying opportunities to enhance value chain performance and improve farmer incomes.

1.3.2 Specific Objectives

i. Assess policy constraints affecting value addition and market access.

ii. Evaluate market access challenges facing smallholder farmers and other actors.

iii. Identify gaps in coordination and support mechanisms across stakeholders.

iv. Recommend practical strategies and policy interventions to strengthen competitiveness and foster inclusive, sustainable growth of the grain value chains.

1.4 Scope and Coverage

The scope of this study was defined along four dimensions: thematic, institutional, geographical, and temporal, to ensure a comprehensive understanding of the policy and market access environment shaping the maize, rice, and beans value chains in Eastern Uganda.

Thematic Scope: The study focused on policy and market access constraints affecting maize, rice, and beans—three of Uganda's most strategic staples. Key thematic areas included value addition, post-harvest management, infrastructure and logistics, financial inclusion, market information systems, regulatory compliance, and regional trade. The study further examined post-harvest losses, estimated at **30% for maize and 25% for beans** (World Bank, 2023), and weak value addition capacity, with less than **25% of actors** having access to modern processing or storage technologies (AGRA, 2023).

Institutional Scope: The study covered actors across the entire value chain, including smallholder farmers, farmer organizations, aggregators, processors, traders, cooperatives, financial institutions, and relevant government bodies such as the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Ministry of Trade, Industry and Cooperatives (MTIC), Uganda Revenue Authority (URA), and Uganda National Bureau of Standards (UNBS). Development partners, NGOs, and regional institutions like the East African Community (EAC) Secretariat were also considered, given their influence on policy and market integration.

Geographical Scope: The geographical focus was Eastern Uganda, a region that contributes significantly to national grain output. Districts included **Mbale, Sironko, Bulambuli Bugiri, Namutumba, Iganga, Kapchorwa, Kween, and Bukwo,** which are key production hubs for maize, rice, and beans (UBOS, 2024). The study also considered cross-border linkages with Kenya and South Sudan, as these markets represent critical outlets under EAC trade protocols.

Time Scope: The analysis covered developments from **2013 to 2025**, aligning with the National Agricultural Policy (2013), the National Grain Trade Policy (2015), and recent reforms such as the **Markets Act (2023)**. This period allowed the study to capture shifts

in policy implementation, regional trade dynamics under the EAC and AfCFTA, and current priorities under Uganda's **National Development Plan IV (2025/26–2029/30).**

1.5 Critical Success Factors

The success of interventions aimed at strengthening the maize, rice, and beans value chains in Eastern Uganda depended on several critical factors. First, **policy coherence and enforcement** were central. Fragmented regulations and inconsistent implementation had undermined competitiveness; therefore, harmonization of agricultural policies under frameworks such as the **National Agricultural Policy (2013)** and the **Markets Act (2023)** was vital to create an enabling environment (MTIC, 2023; MAAIF, 2013).

Second, **investment in infrastructure and value addition** was critical. Post-harvest losses remained high—estimated at **30% for maize and 25% for beans**—largely due to poor storage and inadequate processing facilities (World Bank, 2023). Expanding rural roads, energy access, and agro-processing hubs was essential for market integration and reducing losses.

Third, **access to finance and inputs** determined productivity. Less than **35% of farmers** accessed formal credit, while demand for certified seeds and fertilizers remained unmet, with **75% of farmers citing improved seed access** as a key need (AGRA, 2023). Tailored financing, insurance schemes, and quality input systems were success enablers.

Finally, **strong stakeholder coordination**—including government, private sector, and farmer organizations—was necessary to promote inclusivity, reduce duplication, and leverage opportunities under the **EAC** and **AfCFTA** for regional market expansion (World Bank, 2023; AGRA, 2023).

1.6 Structure of the Report

This report is structured into five chapters that address critical aspects of policy and market access interventions for maize, rice, and beans in Eastern Uganda. Chapter One introduces the study by presenting the background, purpose, objectives, scope, and structure, situating the three value chains within Uganda's agricultural sector, which employs over 62.3% of households (UBOS, 2024), and underscoring their contribution to food security, incomes, and trade. Chapter Two outlines the methodology, including research design, sampling framework, data collection, and analysis methods, applying a mixed-methods approach that combined surveys, key informant interviews, focus group discussions, and secondary data review. Chapter Three examines the policy and market access landscape, highlighting value addition gaps, post-harvest losses—estimated at 30% for maize and 25% for beans (World Bank, 2023)—infrastructure constraints, weak institutional coordination, and financial barriers limiting smallholder participation. Chapter Four presents the study findings, structured around policy constraints, market access challenges, coordination gaps, and opportunities for value chain growth, drawing on both quantitative and qualitative insights from actors across Eastern Uganda. Finally, Chapter Five provides conclusions and evidence-based recommendations aligned with Uganda's National Development Plan IV (2025/26–2029/30) and regional trade frameworks such as the EAC and AfCFTA, aimed at enhancing competitiveness, inclusivity, and resilience in Uganda's grain value chains.

CHAPTER 2

Policy Environment for Market Access

In this chapter

- Overview of Uganda's Trade and Agriculture Policies.
- Legal and Regulatory Frameworks.
- Institutional Roles and Coordination.
- Regional and International Trade Agreements.

POLICY ENVIRONMENT FOR MARKET ACCESS

2.1 Overview of Uganda's Trade and Agriculture Policies

Uganda's agriculture remains a critical driver of economic growth and rural livelihoods. The sector contributes about 24% of GDP, accounts for 35% of exports, and employs more than 68% of the national workforce. Guided by the National Agriculture Policy (NAP), the government aims to transform subsistence farming into a competitive, profitable, and sustainable commercial sector in line with Uganda Vision 2040. The Agriculture Sector Development Strategy and Investment Plan (DSIP) operationalize this vision by focusing on improved market access, value addition, strengthening of the enabling environment, and building institutional capacity. Expanding domestic and export markets for priority crops particularly maize, rice, and beans requires coordinated policy actions that address infrastructure gaps, strengthen quality standards, and boost competitiveness.

The National Organic Agriculture Policy (NOAP) aligns with the NAP to promote sustainable, low-input organic farming systems, complemented by policies such as the National Environment Management Policy (2009), National Land Use Policy (2014), Food and Nutrition Policy (2003), and National Fertilizer Policy (2016), all of which support environmentally friendly practices, soil fertility enhancement, and safe food production for domestic and export markets. Agricultural Extension Guidelines and Standards issued by MAAIF ensure the delivery of coordinated and effective advisory services across value chains, regulating service quality, collaboration, and capacity building. Additional frameworks include the Agriculture Sector Strategic Plan (ASSP), the National Agricultural Extension Policy (2016), the Draft National Seed Policy (2014), the Draft Irrigation Policy and Master Plan (2010–2035), the National Agricultural Advisory Services Act (2001), and the National Agricultural Research Organization Act (2005). Collectively, these policies and frameworks emphasize commercialization of smallholder agriculture, environmental sustainability, climate adaptation, and alignment with continental and global commitments such as the Comprehensive Africa Agriculture Development Programme (CAADP) and the Malabo Declaration.

2.2 Legal and Regulatory Frameworks

Uganda's agricultural marketing environment has been shaped by extensive liberalization reforms, including the removal of price controls and export taxes to reduce trade barriers. Tariff simplification measures have been implemented to ease cross-border trade, yet non-tariff measures such as import licensing and withholding tax requirements still erode the full benefits of liberalization. The DSIP identifies policy and legal gaps as critical bottlenecks to competitiveness. Weak enforcement of quality standards, lack of harmonization between trade and agricultural regulations, and insufficient post-harvest handling systems limit the potential of the maize, rice, and beans value chains to reach profitable markets.

Beyond trade measures, Uganda's agricultural legal framework includes sector-specific laws and policy instruments such as the National Fertilizer Policy (2016), which guides the production, importation, distribution, and use of fertilizers; the Draft National Seed Policy (2014), aimed at ensuring seed quality and access; the Draft Irrigation Policy and National Irrigation Master Plan (2010–2035), which provides a blueprint for irrigation

infrastructure development; the National Agricultural Advisory Services Act (2001), establishing the NAADS system; and the National Agricultural Research Organization Act (2005), which governs agricultural research and innovation. While these frameworks collectively seek to strengthen value chain performance, their impact is constrained by resource limitations, enforcement weaknesses, and low awareness among stakeholders.

Table 1: Key Legal and Policy Frameworks Influencing Uganda's Grain Sector

Policy/Regulation	Lead Institution	Key Provisions/Objectives	Target Crops/Sector
National Trade Policy (2015)	Ministry of Trade, Industry and Cooperatives (MTIC)	i. Quality assurance standards for domestic/ export markets ii. Market expansion through trade alignment iii. Development of storage and processing infrastructure iv. Promotion of Warehouse Receipt System for trade and credit access	Maize, Rice, Beans
Markets Act (2023)	Government of Uganda (Parliament)	i. Free vendor registration for transparency ii. Allocation Committees for fair space distribution iii. Regulatory oversight by local authorities	Public and Private Markets
Uganda National Bureau of Standards (UNBS) Regulations	UNBS	i. Limits on heavy metals (arsenic, lead, mercury, cadmium) ii. Standards for moisture, cleanliness, and seed quality	Maize, Beans
Agriculture Sector Strategic Plan (ASSP)	Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)	i. Value chain development from production to market ii. Compliance with EAC grain standards iii. Promotion of structured trading via Warehouse Receipt System & commodity exchanges	Maize, Rice, Beans
National Agriculture Policy (NAP)	Ministry of Agriculture, supported by Ministry of Finance	i. Promotion of market-oriented production ii. Investment in infrastructure (roads, storage, processing) iii. Strengthening of agricultural institutions	Agriculture Sector (broad)

Regional Trade Agreements (EAC Protocols)	EAC Secretariat, Government of Uganda	i. Zero-rated VAT on maize imports within EAC ii. Harmonization of quality standards across EAC states	Maize, Regional Grain Trade
Quality Control and Export Restrictions	Uganda Government, supported by border/health agencies	i. Enforcement of quality controls to prevent export bans ii. Aflatoxin control in maize to maintain trade credibility	Grain Exports (mainly Maize)

2.3 Institutional Roles and Coordination

Uganda's institutional framework for agricultural trade and market access is multi-layered and involves government ministries, statutory agencies, and private sector bodies. The Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) is the lead institution responsible for agricultural policy formulation, sector regulation, and coordination of programs to enhance production, value addition, and market access. The Ministry of Trade, Industry and Cooperatives (MTIC) drives the development of a competitive, export-oriented private sector, supports industrial growth, and facilitates Uganda's integration into regional and global trade systems. The Uganda Export Promotion Board (UEPB) promotes and diversifies exports, providing market intelligence, organizing trade fairs, and supporting exporters in meeting quality requirements.

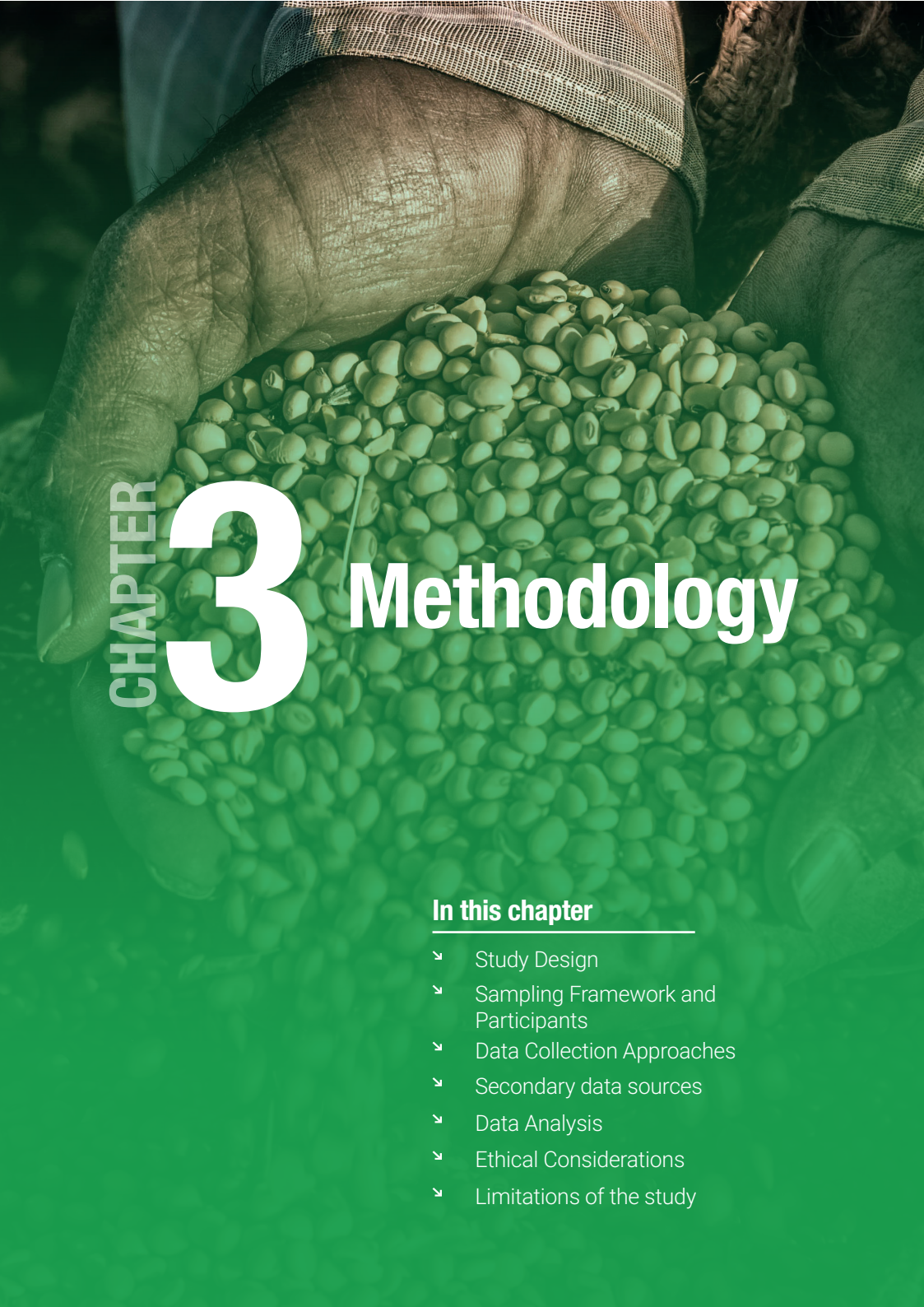
Despite these institutional arrangements, coordination challenges persist. Limited transparency, weak trust among value chain actors, and inadequate information flows reduce the effectiveness of joint initiatives aimed at improving market access. The National Agriculture Sector Secretariat (NASSEC) under MAAIF provides a platform for inter-ministerial coordination, but its role needs strengthening to ensure policy coherence and improved stakeholder collaboration across public, private, and development partner spheres.

2.4 Regional and International Trade Agreements

Uganda participates in a range of regional and international trade agreements that offer preferential market access for agricultural commodities. At the global level, Uganda has been a member of the World Trade Organization (WTO) since 1995, committing to multilateral trade rules and progressive market liberalization. Regionally, Uganda is a member of the East African Community (EAC), which has maintained a customs union since 2005, allowing duty-free trade among partner states. The country also belongs to the Common Market for Eastern and Southern Africa (COMESA), which it joined in 2012, expanding its access to regional markets.

At the continental level, Uganda ratified the African Continental Free Trade Area (AfCFTA) agreement in 2018, which became operational in 2021, creating a unified African market for goods and services across 55 countries. Uganda is also party to the EAC–EU Economic Partnership Agreement (EPA), concluded in 2016 but yet to be signed, which would provide duty-free and quota-free access to the EU for most goods. Furthermore,

Uganda benefits from unilateral trade preferences such as the United States Generalized System of Preferences (GSP) and previously the African Growth and Opportunity Act (AGOA). While these agreements present significant opportunities, Uganda's utilization rates remain modest, especially for processed agricultural goods. Greater emphasis on meeting quality and sanitary standards, coupled with capacity building for exporters, could enhance the country's ability to take full advantage of these trade arrangements, boosting export earnings and improving livelihoods.



CHAPTER 3

Methodology

In this chapter

- Study Design
- Sampling Framework and Participants
- Data Collection Approaches
- Secondary data sources
- Data Analysis
- Ethical Considerations
- Limitations of the study

3 METHODOLOGY

This chapter presents the methodology employed to examine policy and market access interventions for maize, rice, and beans in Eastern Uganda. A mixed-methods approach was adopted to generate comprehensive evidence, combining quantitative and qualitative techniques. The study was undertaken from **March 2025** across nine Eastern Ugandan districts**—Bukwo, Kween, Kapchorwa, Bulambuli, Sironko, Mbale, Namutumba, Bugiri, and Iganga**—covering the major production hubs of the three value chains.

3.1 Study Design

The study adopted a **cross-sectional and descriptive design** with elements of participatory action research. This design enabled both quantitative measurement of production and market variables, and qualitative exploration of stakeholder experiences. Triangulation of data sources ensured validity by integrating survey results, focus group perspectives, expert interviews, and policy reviews. Field observations complemented these methods, providing visual validation of infrastructure, storage facilities, and post-harvest practices.

3.2 Sampling Framework and Participants

A multi-stage sampling framework was employed. At the first stage, nine districts were purposively selected for their strategic role in maize, rice, and beans production. Within districts, sub-counties and cooperatives were identified with the support of local agricultural officers.

i. **Sample size:** 136 respondents participated.

ii. **Composition:** 114 survey participants, 19 key informants, and 3 focus group discussions (8–12 participants each).

iii. **Representation:** Farmers (60%), cooperatives (20%), government officials (15%), and traders (5%).

The Table below presents the survey distribution by district.

District	Respondents	% of Total
Bukwo	21	18.4%
Kween	27	23.7%
Kapchorwa	15	13.2%
Bulambuli	12	10.5%
Sironko	10	8.8%
Mbale	10	8.8%
Namutumba	7	6.1%
Bugiri	6	5.3%
Iganga	6	5.3%
Total	**114**	**100%**

3.3 Data Collection Approaches

3.3.1 Surveys

Structured questionnaires were administered to **114 respondents** across the nine districts. The surveys generated quantitative data on:

i. Production trends and yields (e.g., average maize yield 2.3 MT/ha vs. potential 5 MT/ha).

ii. Input costs and access to certified seed and fertilizers.

iii. Post-harvest losses (30% maize; 25% beans).

iv. Market access challenges such as transport costs, price fluctuations, and middlemen exploitation.

3.3.2 Key Informant Interviews (KIIs)

A total of **19 KIIs** were conducted with district agricultural officers, cooperative leaders, traders, and policymakers. These provided in-depth perspectives on:

i. Policy implementation and enforcement.

ii. Challenges in quality standards, taxation, and export regulations.

iii. Institutional gaps in extension and financial access.

3.3.3 Focus Group Discussions (FGDs)

Three FGDs were conducted (Bukwo, Kween, Namutumba) with **8–12 participants each**. They explored farmers lived experiences around:

i. Middlemen exploitation (reported by 64% of participants).

ii. Credit inaccessibility due to collateral requirements.

iii. Gender and youth barriers in accessing inputs and markets.

3.3.4 Stakeholder Engagement Meetings

District-level meetings with cooperatives, traders, and local authorities validated preliminary findings and promoted dialogue. These forums highlighted cooperative governance issues, taxation bottlenecks, and opportunities for contract farming with institutional buyers (e.g., schools, WFP).

3.4 Secondary Data Sources

Secondary data provided contextual grounding. Sources included:

i. **UBOS (2024)** Census data on agricultural households (62.3%).

ii. **National Grain Trade Policy (2015)** and **Markets Act (2023).**

iii. **FAO** reports on value chains and post-harvest management.

iv. **World Bank (2023)** Uganda Economic Update.

v. **AGRA (2023) Africa Agriculture Status Report.** These sources enabled trend analysis of productivity, market integration, and policy frameworks.

3.5 Data Analysis

3.5.1 Quantitative Analysis

Survey data were entered into SPSS and Excel for descriptive and inferential analysis. Percentages, means, and frequency tables summarized responses. Cross-tabulations compared districts.

3.5.2 Qualitative Analysis

Thematic coding was applied to KIIs and FGDs. NVivo supported clustering of responses into themes: policy awareness, infrastructure gaps, financial barriers, and coordination challenges. Quotes enriched interpretation, e.g., "We lose 20% of beans every season because buyers reject poorly dried produce."

3.5.3 Policy Review

A structured content analysis reviewed policy documents, focusing on coherence, gaps, and alignment with EAC and AfCFTA frameworks. Findings indicated fragmentation across agencies and limited farmer awareness—77.3% of actors were unaware of trade laws.

3.6 Ethical Considerations

The study adhered to ethical standards:

i. Informed consent obtained verbally and in writing.

ii. Anonymity and confidentiality maintained.

iii. Voluntary participation ensured, with participants free to withdraw.

iv. Researchers respected cultural norms and gender sensitivity.

3.7 Limitations of the Study

Several challenges were encountered:

i. Limited time: Data were collected within five days, restricting depth.

ii. Seasonality: The March period coincided with planting, limiting farmer availability.

iii. Hesitancy of respondents: Some farmers were cautious to disclose income data; this was mitigated through trust-building.

iv. Coverage: While nine districts were covered, findings cannot fully represent all Eastern Uganda grain producers.

v. Policy awareness gap: Low literacy levels limited some respondents' ability to engage with technical policy questions.

CHAPTER 4

Key Findings from Primary and Secondary data

In this chapter

- Background Characteristics of Respondents
- Policy and Regulatory Challenges Hindering Value Chain Growth and Competitiveness
- Market Access Issues
- Suggested solutions from stakeholders

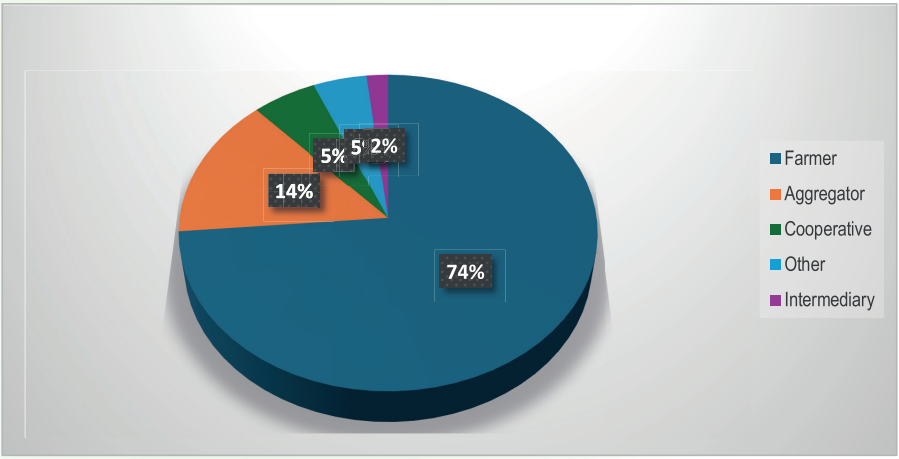
4 KEY FINDINGS FROM PRIMARY AND SECONDARY DATA

4.1 Background Characteristics of Respondents

4.1.1 Type of business

The survey results (Figure 1) reveal that out of the total sampled respondents, **73.6% were farmers,** confirming that primary production dominates the maize, rice, and beans value chains in Eastern Uganda. **Aggregators constituted 14.5%**, reflecting a moderate role in linking farmers to markets, while **cooperatives (5.5%) and intermediaries (1.8%)** were notably underrepresented, pointing to weak formal group marketing structures and limited coordination. Exporters accounted for less than **1%,** underscoring restricted participation in external trade. These patterns emphasize the need for targeted interventions to **strengthen aggregation systems, build cooperative capacity, and enhance export readiness** to improve value chain competitiveness.

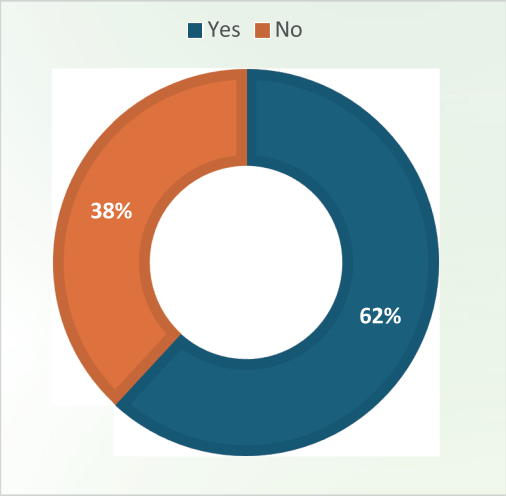
Figure 1: Type of Business



4.1.2 Membership to Farmers association and Cooperative

Figure 2 shows that **61.8% of respondents** belonged to a farmers' association, SACCO, or cooperative, reflecting strong potential for **collective action, joint marketing, and coordinated support** within the maize, rice, and beans value chains. However, **38.2% reported no group affiliation**, limiting their access to shared resources, information flows, credit facilities, and market opportunities. This imbalance underscores a critical gap in value chain inclusivity. Targeted interventions are therefore needed to **promote group formation, strengthen governance of farmer organizations, and link independent actors** to collective structures, enhancing participation in **public–private partnerships and investment programs** for improved competitiveness and resilience.

Figure 2: Membership to farmer cooperative and association.



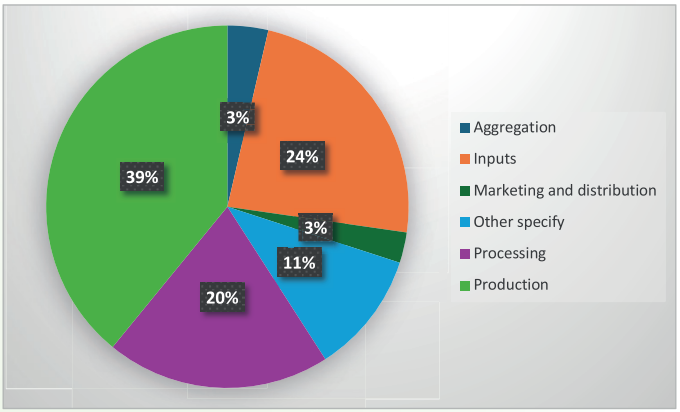
4.1.3 Maize, Rice and Beans Value chains

This section analyzes the **structure and performance** of the maize, rice, and beans value chains in Eastern Uganda, with emphasis on **value addition practices and market pricing dynamics**. It traces the stages of value creation—ranging from input provision and production to processing, aggregation, and marketing—and evaluates the extent of their development across the three crops. The analysis highlights key **opportunities and gaps**, particularly in post-harvest processing, storage, and structured marketing systems. It also examines **seasonal price fluctuations,** demonstrating how market timing shapes profitability. Collectively, these insights provide a strong basis for **strategic interventions** to enhance efficiency, raise farmer incomes, and strengthen competitiveness in both domestic and regional markets.

4.1.3.1 Maize Value Chain

As illustrated in Figure 3, the maize value chain demonstrates that the greatest value addition occurs at the production stage (39%), followed by inputs (24%) and processing (20%), while marketing and distribution account for only 3%. This pattern reflects a relatively active chain, with emphasis on on-farm practices and some post-harvest processing, including milling and packaging. However, the extremely low level of value addition at aggregation (3%) signals weak coordination and underutilization of bulking centers, limiting economies of scale and bargaining power. A few responses categorized under "Other" point to informal or non-traditional practices. Overall, the maize chain presents strong potential for scaling through improved aggregation, input services, and marketing infrastructure, enabling smallholders to transition into semi-commercial production.

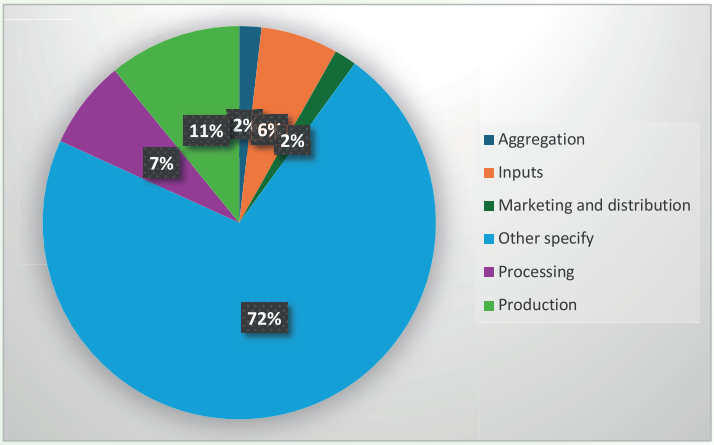
Figure 3: Maize Value chain



4.1.3.2 Rice Value Chian

As shown in **Figure 4,** the rice value chain is notably weak and fragmented, with **72% of respondents** selecting "Other," indicating that most value addition activities are either **informal, unstructured, or poorly defined.** Among the standard categories, **production accounts for only 11%,** while **processing (7%)**, inputs, aggregation, and marketing register even lower shares. This highlights a chain constrained by **limited mechanization, smallholder-level milling, and weakly organized processing and marketing systems.** Such gaps restrict efficiency, profitability, and competitiveness. To unlock potential, the rice value chain requires significant investment in **formalizing value addition**, particularly through structured aggregation systems, upgraded milling and storage technologies, and increased farmer awareness on how value addition can raise incomes and expand access to high-value markets.

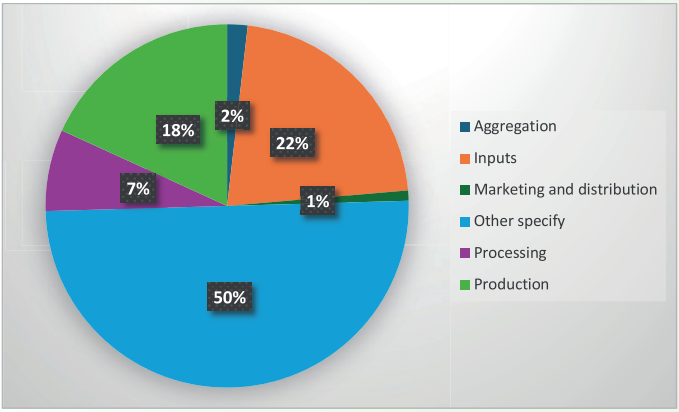
Figure 4: Rice Value Addition



4.1.3.3 Beans Value Chain

As shown in **Figure 5**, nearly **50% of respondents** categorized their activities under "Other," reflecting a lack of clear identification of value addition stages in the beans value chain. Among the defined categories, **inputs (22%)** and **production (18%)** dominate, while **processing, aggregation, and marketing** are rarely practiced. This pattern highlights a **low level of value chain development,** where most actors remain confined to primary stages with minimal upgrading. The findings underscore significant opportunities for **capacity building, infrastructure investment, and targeted support services** to strengthen structured value addition, improve quality, and enhance market competitiveness for beans in Eastern Uganda.

Figure 5: Beans Value Addition



4.1.3.4 Prices of Selected Crops

As illustrated in **Table 2**, seasonal price variations strongly influence profitability in the maize, rice, and beans value chains. **Maize prices averaged UGX 1,020 during the off-peak season**, compared to **UGX 745.73 in the peak season**, while beans averaged UGX 1,704.63 off-peak versus UGX 1,145.46 at peak. These fluctuations reflect the typical **supply-demand dynamic**, where prices rise as supply tightens. In contrast, **rice prices increased slightly during the peak season (UGX 714.55) compared to off-peak (UGX 624.55)**, likely linked to variations in consumer demand or quality differentials. Among the three crops, **beans commanded the highest average prices** but also exhibited the greatest **volatility,** underscoring both their high market value and inherent risk. These dynamics highlight the potential for farmers and traders to **maximize returns through improved storage, delayed sales, and collective marketing,** particularly for maize and beans, where seasonal price differentials are more pronounced.

Table 3: Seasonal Price Trends of Maize, Beans, and Rice in Eastern Uganda

Crop	Mean Price (Off-Peak)	Mean Price (Peak)	Std. Dev (Off-Peak)	Std. Dev (Peak)
Maize	1020	745.73	506.119	395.037
Rice	624.55	714.55	1103.804	918.598
Beans	1704.63	1145.46	1797.136	1284.81

4.2 Policy and Regulatory Challenges Hindering Value Chain Growth and Competitiveness

4.2.1 Low Legal Awareness Among Value Chain Actors

One of the most prominent policy constraints identified in the study is the **low level of legal awareness** among value chain actors. As illustrated in **Figure 6, 77.3% of respondents** were unaware of any laws governing market access for maize, rice, or beans, while only **22.7%** reported having knowledge of such frameworks. This significant knowledge gap indicates that most farmers and traders operate in **informal or semi-formal spaces,** disconnected from the regulatory systems that shape grain trade.

Figure 6:

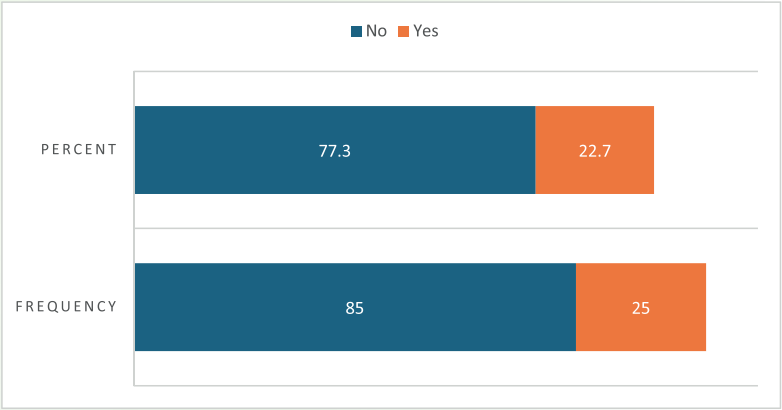


Figure 6: Knowledge of any laws that govern market access Among the minority (22.7%) who reported knowledge of laws governing maize market access, the emphasis was largely on quality and standards (Figure 7). Respondents highlighted regulations on moisture content, certification, post-harvest handling, drying, and processing. Others mentioned quality assurance, product standardization, plant breeding controls, trading permits, and tax obligations. While overall awareness remains low, those who are informed are mainly familiar with practical rules that directly affect day-to-day trade. This underscores the need for stronger legal sensitization on formal market requirements to improve policy awareness and market access in Uganda's maize value chain.

Figure 7: The laws known to farmers

The absence of legal awareness undermines compliance with **quality standards, food safety regulations, and trade protocols,** which are critical for entry into structured and export markets. Without knowledge of market rules, farmers struggle to meet **minimum quality thresholds** demanded by millers, supermarkets, and cross-border buyers, while traders risk penalties, delays, and losses from non-compliance with licensing, taxation, and certification requirements. This situation fosters an opaque market environment where informal arrangements dominate and efforts to formalize grain trade face resistance or apathy.

Among the few actors who demonstrated some legal awareness, understanding was concentrated on **practical issues** such as moisture content standards, post-harvest handling requirements, product certification, and maize flour processing guidelines. While this indicates some alignment between knowledge and operational realities, the overall picture remains one of **uneven and fragmented policy literacy,** severely limiting sector-wide compliance and competitiveness.

These findings mirror evidence from other studies. For example, the **Food and Agriculture Organization (FAO, 2019)** noted that poor awareness of sanitary and phytosanitary (SPS) measures is a leading cause of Ugandan grain rejection in regional and international markets. Similarly, the **East African Grain Council (EAGC, 2023)** reported that more than **65% of smallholder farmers in East Africa** are not familiar with harmonized **EAC grain standards,** hindering intra-regional trade. At the national level, the **Uganda Bureau of Statistics (UBOS, 2024)** highlighted that only **28% of farmers** had ever accessed extension services covering trade-related laws, pointing to weak institutional outreach.

Subregional data also reveals a consistent trend. In **Kenya**, studies show that **over 60% of maize farmers** remain unaware of the Aflatoxin Control Act and related maize handling regulations (Kenya Agriculture and Livestock Research Organization, 2023). In

Tanzania, while rice policies emphasize export promotion, **54% of farmers** surveyed in 2022 reported lacking knowledge of certification processes required to penetrate formal markets (FAO & IFPRI, 2022). These statistics highlight that Uganda's knowledge gaps are not isolated but part of a broader **regional challenge of policy illiteracy** across grain value chains.

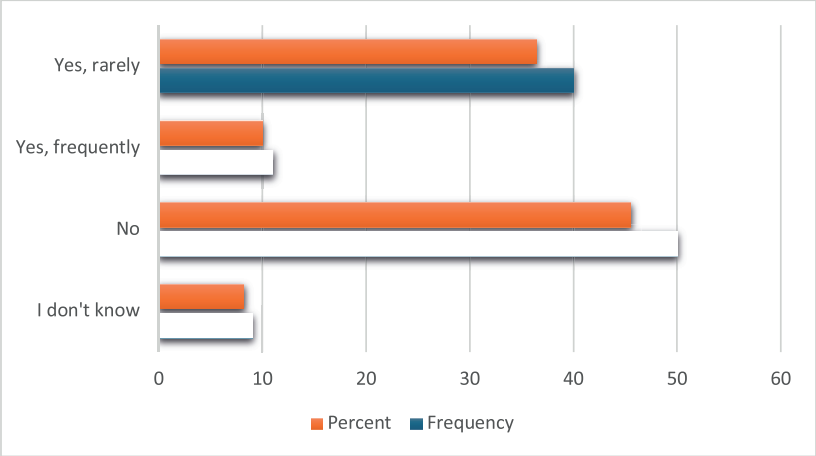
At a regional level, the **African Union (AU, 2023)** estimates that Africa loses up to **US $4 billion annually** in grain trade potential due to non-compliance with quality and safety standards—much of it linked to inadequate legal awareness and weak enforcement. Within the framework of the **African Continental Free Trade Area (AfCFTA)**, harmonizing and disseminating grain trade regulations has been flagged as a priority, but uptake at farmer level remains limited.

In summary, the study underscores that **low legal literacy is a systemic barrier** to formalization and competitiveness in Uganda's maize, rice, and beans value chains. Closing this gap will require **targeted policy sensitization, grassroots legal literacy campaigns, stronger extension systems, and digital platforms** to disseminate simplified guidelines. Strengthening awareness will not only enhance compliance with standards but also enable farmers and traders to fully exploit opportunities in **domestic, regional (EAC), and continental (AfCFTA) markets.**

4.2.2 Weak Use of Legal and Market Information in Business Decisions

A major policy constraint identified in this study is the **limited use of legal and market information in business decision-making**. As illustrated in **Figure 7, 45.5% of respondents** reported never using such information, **36.4% used it rarely,** while only **10% used it frequently,** and **8.2% were uncertain.** This shows that even when policy information is available, it is often not translated into **practical or strategic decisions.** The reasons include lack of trust in information sources, limited understanding of regulatory frameworks, and the perception that compliance offers little immediate benefit in informal markets where most actors operate.

Figure 8: Use of Legal and Market Information in Business Decision-Making



This weak application of policy guidance undermines competitiveness. It contributes to **failure to meet market standards,** misalignment with trade protocols, and underutilization of incentives under national, regional, and continental frameworks. For instance, without knowledge of **East African Community (EAC) trade protocols,** small-scale traders lose opportunities to benefit from **zero-rated tariffs and harmonized grain standards**. Similarly, ignorance of **sanitary and phytosanitary (SPS) requirements** leads to grain rejection in both local and export markets.

Findings from this study align with other evidence. At the **national level,** UBOS (2024) reported that only **28% of Ugandan farmers** had ever accessed trade-related extension services, indicating weak institutional outreach. At the **subregional level,** a Kenya Agricultural Research Organization (KALRO, 2023) survey found that **60% of maize farmers** were unaware of aflatoxin regulations, while in Tanzania, 54% of rice farmers lacked knowledge of export certification processes (FAO & IFPRI, 2022). Regionally, the **East African Grain Council (EAGC, 2023)** observed that **over 65% of farmers in East Africa** are unfamiliar with harmonized EAC grain standards, limiting regional integration. At the **continental level,** the **African Union (AU, 2023)** estimated annual losses of **US$4 billion** in grain trade due to non-compliance with standards, much of it linked to poor application of policy information.

These findings highlight an urgent need for **grassroots policy sensitization, simplified information dissemination, and digital tools** to improve decision-making. Strengthening the practical application of market information will enable farmers and traders in Uganda to leverage structured trade, reduce losses, and fully exploit opportunities under the **EAC** and **AfCFTA** frameworks.

4.2.3 Fragmented and Poorly Enforced Policies

The study revealed that Uganda's grain sector suffers from **fragmented policies and weak enforcement,** largely due to overlapping institutional mandates. Agencies such as **MAAIF, MTIC, UNBS, and URA** often operate in silos, resulting in inconsistencies, duplication of efforts, and inefficiencies in service delivery. This fragmentation undermines value chain coordination, confuses farmers and traders, and increases transaction costs. For example, **44.5% of respondents** cited the absence of clear laws protecting traders, while **42.7% pointed to unfair taxation** as a barrier to market participation.

These findings echo national-level studies by UBOS (2024), which identified fragmented agricultural regulations as a key barrier to formalization. Subregionally, research in **Kenya (KALRO, 2023)** and **Tanzania (FAO & IFPRI, 2022)** highlighted similar institutional overlaps limiting efficiency in maize and rice sectors. Regionally, the **EAC (2023)** and **AU (2023)** reported that policy fragmentation across member states costs Africa's grain trade an estimated **US$4–5 billion annually**, constraining competitiveness under AfCFTA.

4.2.4 Weak Cooperative Governance

The study revealed that **weak governance within farmer cooperatives** undermines their effectiveness in aggregation, marketing, and farmer support. Issues such as **political interference, corruption, and hereditary leadership practices** erode accountability, discourage member participation, and limit cooperatives' bargaining power. Only **22%**

of respondents reported belonging to active and well-governed cooperatives, while many described groups as inactive or dominated by entrenched leadership structures. This weak governance hampers collective marketing, reduces economies of scale, and sustains farmer dependency on exploitative middlemen.

At the national level, UBOS (2024) noted that less than **35% of registered cooperatives** in Uganda remain fully operational, with mismanagement cited as a key factor. Subregional studies report similar trends: in Kenya, **cooperative corruption scandals** in the maize and dairy sectors reduced farmer trust (KALRO, 2023), while in Tanzania, hereditary leadership in rice cooperatives limited youth participation (FAO & IFPRI, 2022). Regionally, the **EAC (2023)** emphasized that poor governance across farmer groups weakens structured trade, costing Africa's agriculture billions in unrealized value under AfCFTA.

4.2.5 Unfavourable Taxation and Compliance Burdens

The study found that **high and inconsistent taxes on agro-inputs, irrigation systems, and agro-processing equipment** discouraged investment and significantly raised production costs. Farmers and processors reported unpredictable import duties and multiple levies across districts. Figure 8 showed **47% of respondents** cited taxation as reducing profitability, and **44.5%** emphasized lack of protective trade laws. These tax burdens weaken competitiveness and limit access to affordable technology.

In Uganda, the standard **Value-Added Tax (VAT) rate is 18%,** including on imports of most goods and services. Import duties range from **0% to 60%** depending on classification under the East African Community Common External Tariff. Capital goods and plant machinery may be duty-exempt in certain cases (e.g. Free Zones), but inconsistent application and documentation requirements often diminish the benefit.

At the national level, UBOS (2024) reported that smallholders face effective tax burdens well above regional averages, constraining scaling. Subregional studies show similar trends: in Kenya input VAT increases production costs by ~12% (KALRO, 2023), while in Tanzania import duties on irrigation equipment have stunted rice intensification (FAO & IFPRI, 2022). Regionally, the East African Community (2023) estimated taxation-related inefficiencies cost East African agribusinesses over **US$1.5 billion annually,** reducing competitiveness under the AfCFTA framework.

4.2.6 Unfair Trade Dynamics

The study found that Uganda's grain value chains are heavily constrained by unfair trade dynamics, with farmers consistently reporting that they are disadvantaged by the way markets are structured and controlled. Farmers described the domestic market as tilted against them: "Middlemen are the biggest problem we face. They determine the prices and farmers have no say. You may harvest a lot but you end up selling cheaply because you don't have alternatives or storage facilities" (FGD, Kapchorwa). Others emphasized how information asymmetries fuel exploitation: "Middlemen cheat a lot; they have market information that farmers don't. When they come to buy, they offer their own prices, and since farmers don't know the actual market rates, they just accept whatever is offered" (Agriculture Officer, Kapchorwa). Some even linked this unfairness to cross-border arbitrage: "Middlemen cheat us a lot. They buy from us at very low prices and then take the same produce to Kenya and sell at double the price. We are the ones doing the hard work but gain the least" (Kisakye Farmers' Group, Namutumba).

Farmers also reported being disadvantaged by illicit product inflows, porous borders, and weak enforcement of trade protections, all of which undermine competitiveness. For example, traders noted that cheaper and often lower-quality grain from neighbouring countries depresses domestic prices, while inadequate border surveillance facilitates informal trade that bypasses both taxation and quality control measures in relation to the above one farmer stated that; "Currently, there are no laws regulating market access, so the market operates freely, which often works against farmers. Without licensing or formal contracts, traders take advantage of smallholders." (FGD, Kapchorwa)

At the national level, UBOS (2024) reported that unregulated imports lower farm-gate prices for maize and beans by as much as **15%.** In addition, Uganda is estimated to lose **UGX 210 billion annually** due to informal cross-border grain trade. Subregional evidence points to similar trends: in Kenya, informal maize imports from Tanzania distort market stability (KALRO, 2023), while in Tanzania, widespread rice smuggling erodes incentives for domestic production (FAO & IFPRI, 2022).

At the regional level, the East African Grain Council (EAGC, 2023) estimated that porous borders and persistent non-tariff barriers cost East Africa more than **US$500 million annually** in lost tax revenues and farmer incomes. Globally, the World Bank (2023) emphasized that unfair trade practices—including dumping and illicit inflows—continue to constrain Africa's ability to fully exploit opportunities under the African Continental Free Trade Area (AfCFTA).

4.2.6.1 Weak Legal Protection for Farmers and Traders

The study revealed that inadequate legal protection and unpredictable policy environments significantly expose farmers and traders to harassment, arbitrary fines, and abrupt regulatory changes. Many described opaque processes, inconsistent enforcement, and lack of recourse when rights were violated. Stakeholders observed that the absence of effective legal frameworks allows middlemen and larger traders to dominate without accountability, leaving farmers without mechanisms to enforce fair contracts or pricing.

As one respondent noted, "There are no clear national laws to regulate maize, rice, and bean marketing. This means anyone can come and dictate prices, and farmers cannot challenge them because there is no policy to back them up" (KII, Namutumba). Similarly, participants explained that "Farmers don't complain about being cheated because there is no regulatory body to report to. Even if you try, the process is long, and nothing is done" (FGD, Kapchorwa). Others highlighted the absence of predictable and binding trade relationships: "Farmers lack formalized contracts with buyers, so every season prices change, sometimes drastically. You can't plan ahead when you don't know what you will get" (Masaha SACCO, Namutumba).

This finding aligns with national data: UBOS (2024) noted that over **60% of agricultural producers** lacked formal contract protections or legal documentation for their trade relationships. Subregionally, in **Kenya**, research by KALRO (2023) found that farmers engaging in cross-border trade are often subject to unpredictable customs enforcement and informal levies. In Tanzania, FAO & IFPRI (2022) identified similar risks for rice farmers trading informally due to poor awareness of trade law protections.

Regionally, the East African Grain Council (2023) estimated that unclear legal protection

reduces farmer participation in EAC export programs by **approximately 30%**, limiting regional market integration, while internationally, the United Nations' World Trade Organization (WTO, 2023) emphasizes that legal certainty and predictable regulatory regimes are key drivers of agricultural export growth.

In Uganda's legal regime, while laws such as the **Plant Protection and Health Act, the East African Community Customs Management Act**, and the **Value-Added Tax Act** are in place, farmers report that enforcement is inconsistent and dispute resolution mechanisms are weak and expensive. Closing these gaps—through legal literacy, transparent regulation, and accessible legal remedies—would strengthen the bargaining power, stability, and incomes of value chain actors.

4.2.7 Poor Dissemination of Policy Information

The study found that inadequate dissemination of policy and regulatory information remains a major barrier to compliance among farmers and traders. While policies exist at the national level, both farmers and local leaders emphasized that awareness is extremely low, with little effort made to sensitize those directly engaged in production and trade. As a result, policies often remain "on paper" without practical impact. As one officer explained, "We have policies in place, but most farmers are unaware of them. At the district we try to engage, but resources for sensitization are limited, so policies remain on paper and don't reach the end users" (Agriculture Officer, Kapchorwa KII). Farmers echoed this concern, noting, "We do not have clear knowledge of any policies that regulate marketing at the district level. Farmers here only hear about policies when there is a crisis or a rejection of produce at the border" (FGD, Kapchorwa). Others described how this gap leaves them vulnerable in the marketplace: "We don't know much about the laws that govern trading in maize or beans. Nobody educates us on this, so we just follow what buyers say" (Women Leader, Namutumba).

Nationally, UBOS (2024) reported that less than 30% of farming households in Uganda had access to extension services providing policy or market guidance. Subregional evidence shows similar gaps: in Kenya, KALRO (2023) noted that 55% of smallholder maize farmers lacked reliable policy information, while in Tanzania, FAO & IFPRI (2022) found that poor communication of rice trade regulations limited farmer compliance with export standards. Regionally, the East African Grain Council (2023) observed that weak dissemination of harmonized standards reduces participation in structured EAC trade by nearly 25%. At the international level, the WTO (2023) emphasized that limited access to clear, timely policy updates is among the top five barriers to smallholder integration into global agri-food value chains.

4.2.8 Policy Gaps in Health and Safety

The study highlighted significant policy gaps in health and safety, particularly the weak enforcement of occupational safety standards in the handling of agrochemicals. Farmers frequently cited experiences of skin irritations, respiratory issues, and even cases of accidental poisoning. Such unsafe practices not only undermine farmer health but also reduce labor productivity and increase household medical costs. Participants further expressed concern about poor post-harvest handling and aflatoxin contamination, pointing to the absence of consistent monitoring and enforcement. As one respondent

observed, "Many farmers dry their maize on the ground, sometimes on bare soil. When it rains, the maize gets mold, and later people complain of aflatoxins. This practice is risky but continues because no one is monitoring closely" (KII, Kapchorwa)). Farmers added that these lapses limit access to better markets: "Kenyan traders reject Ugandan maize because of poor post-harvest handling. They test for aflatoxins and other standards, which our farmers usually fail to meet" (FGD, Kapchorwa). Others pointed to weak enforcement despite clear regulations: "Strict regulations exist for moisture content, packaging, and aflatoxin levels, but our farmers do not meet them due to lack of training and resources. Government enforcement is also weak" (KII, Kapchorwa).

In addition to handling challenges, counterfeit inputs were repeatedly raised as a critical threat to both productivity and farmer safety. As one farmer lamented, "Fake agricultural inputs are a major problem, leading to poor yields. Sometimes you buy seeds that don't germinate or chemicals that damage the crop. These fakes are everywhere in the market" (KII, Kapchorwa). Others called for stronger state action: "Stronger policies on counterfeit seeds and fertilizers should be enforced. Right now, anyone can sell anything, and farmers suffer the consequences" (Women Youth Group, Namutumba). Together, these findings underscore how gaps in enforcement of safety standards and input regulation not only compromise farmer health but also erode the quality and competitiveness of Ugandan grain in both domestic and cross-border markets.

Nationally, UBOS (2024) estimated that 42% of farming households in Uganda lacked awareness of safe agrochemical use. The Ministry of Health has acknowledged rising cases of pesticide-related illnesses, particularly in maize- and rice-producing regions. Subregional evidence shows similar patterns: in Kenya, KALRO (2023) reported that 61% of smallholders used agrochemicals without protective gear, while in Tanzania, FAO & IFPRI (2022) identified poor regulatory enforcement as a driver of occupational hazards among rice farmers. Regionally, the EAC (2023) warned that inadequate occupational health standards across member states threaten compliance with food safety regulations. Internationally, the World Health Organization (WHO, 2023) estimated that unsafe agrochemical exposure accounts for nearly 385 million cases of acute pesticide poisoning annually, with Africa disproportionately affected.

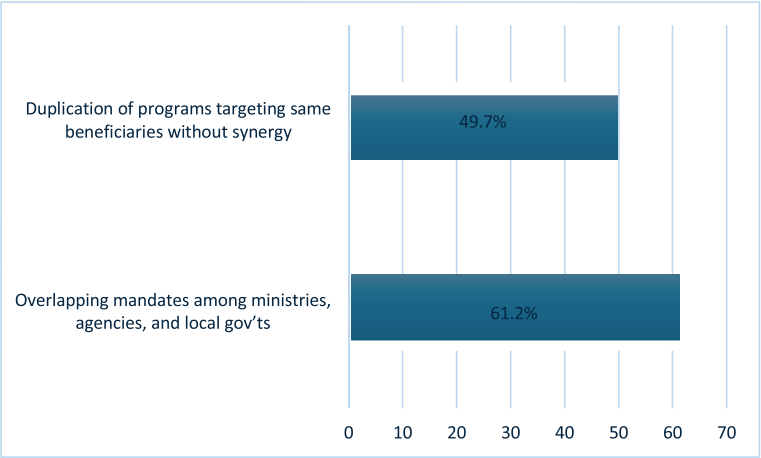
4.2.9 Inadequate Institutional Coordination

The study revealed that **weak institutional coordination** is a persistent barrier to effective policy and market interventions in Uganda's maize, rice, and beans value chains. As shown in **Figure 9, 61.2% of respondents** noted overlapping mandates among ministries, agencies, and local governments, while **49.7%** highlighted duplication of programs that often target the same beneficiaries without synergy. This siloed approach leads to inefficient use of resources, inconsistent enforcement of standards, and fragmented support to farmers and traders.

At the national level, UBOS (2024) reported that more than **40% of agricultural programs** are implemented without structured inter-ministerial collaboration, weakening impact at the grassroots. Subregional findings echo this: in **Keny**a, KALRO (2023) noted inefficiencies in maize support programs caused by uncoordinated actions between county governments and national agencies, while in **Tanzania**, FAO & IFPRI (2022) observed duplication in rice sector projects due to poor alignment between government and donor initiatives. Regionally, the **East African Grain Council (2023)** highlighted that

lack of harmonization among EAC states delays adoption of common grain standards. Internationally, the **World Bank (2023)** stressed that weak institutional coordination reduces agricultural investment efficiency globally, costing developing economies up to **US$3 billion annually** in duplicated or poorly aligned interventions.

Figure 9: Barriers to effective policy and market intervention

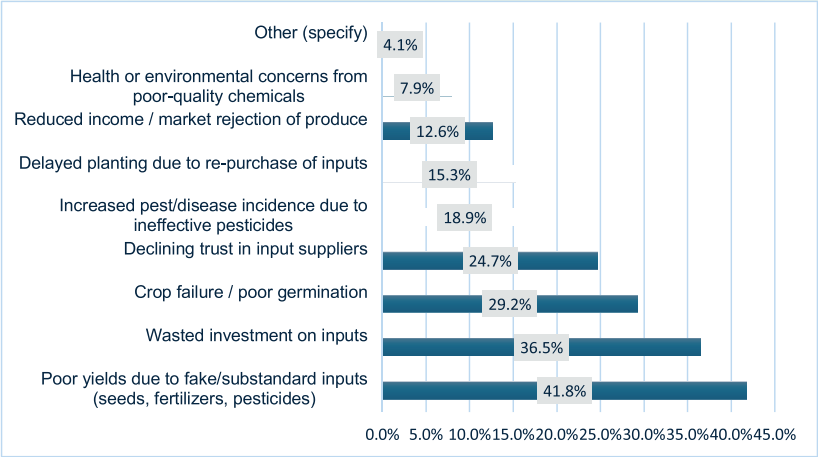


4.2.10 Counterfeit Agro-Inputs and Low Yields

The study revealed that **counterfeit agro-inputs** remain a major barrier to productivity in Uganda's grain value chains. As shown in **Figure 10, 41.8% of respondents** reported experiencing poor yields due to fake or substandard inputs, particularly seeds, fertilizers, and pesticides. Farmers noted that counterfeit products often appear in informal markets, are difficult to distinguish from genuine brands, and result in wasted investment, crop failure, and declining trust in input suppliers.

Nationally, UBOS (2024) estimated that counterfeit inputs reduce Uganda's maize yields by up to **30%**, costing farmers billions of shillings annually. Regionally, the East African Grain Council (2023) reported that fake agro-inputs account for **20–25% of inputs sold** in East Africa, undermining adoption of improved technologies. Studies in Kenya by KALRO (2023) show that counterfeit seeds reduce farmer output by **20%,** while in Tanzania, FAO & IFPRI (2022) observed that fake fertilizer and pesticide markets significantly constrain rice productivity. Internationally, the FAO (2022) and World Bank (2023) highlighted that counterfeit inputs contribute to yield gaps across Sub-Saharan Africa, with losses estimated at **US$3 billion annually,** reinforcing food insecurity and slowing agricultural transformation.

Figure 10: Barriers to productivity

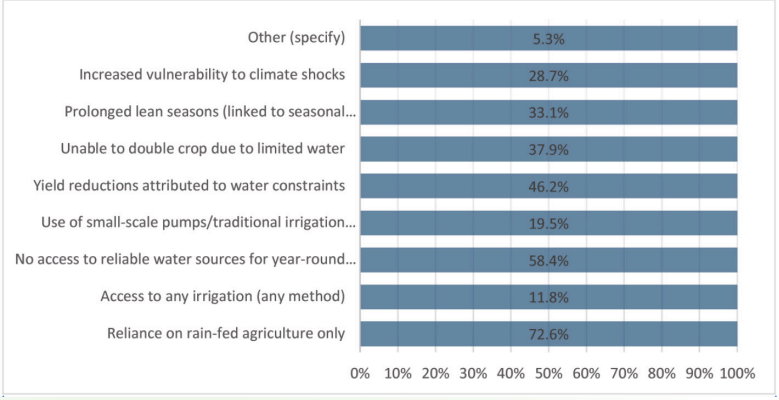


4.2.12 Lack of Water for Year-Round Production

The study revealed that **limited access to irrigation and reliable water sources** is a major barrier to year-round production of maize, rice, and beans in Eastern Uganda. As shown in **Figure 11, 72.6% of respondents** reported relying solely on rain-fed agriculture, making them highly vulnerable to seasonal variability and climate shocks. Only **11.8%** indicated access to any form of irrigation, mostly small-scale pumps or traditional methods, which are insufficient for commercial production. This constraint reduces yields, limits double cropping, and exposes farmers to prolonged lean seasons.

Nationally, UBOS (2024) reported that only **2% of Uganda's arable land** is irrigated, despite the country's irrigation potential of over **560,000 hectares** (MAAIF, 2023). Regionally, the East African Community (2023) observed similar patterns, with irrigation coverage below **5%** across member states. In Kenya, only **3% of arable land** is irrigated, while in Tanzania the figure stands at **2.7%** (FAO & IFPRI, 2022). Internationally, the World Bank (2023) highlighted that Sub-Saharan Africa has the lowest irrigation coverage globally, averaging **6%,** compared to **37% in Asia**, a gap that severely limits agricultural competitiveness and food security.

Figure 11: Source of water for production



4.3 Market Access Issues

4.3.1 Poor Infrastructure and transport networks

The study identified **poor infrastructure** as a major constraint to value chain efficiency in Eastern Uganda. Weak road networks, inadequate storage facilities, and unreliable electricity significantly raise transaction costs, undermine value addition, and reduce competitiveness. As shown in **Table 6**, only **36.8% of respondents** reported adequate transport capacity, while **86.8% had some storage facilities,** though most were basic and lacked moisture control. Limited access to reliable electricity further constrained processing and aggregation, contributing to post-harvest losses and discouraging investment. Seasonal inaccessibility during the rainy season isolates farming communities, forcing farmers to sell cheaply to local middlemen.

Table 4: Business Capacity to Meet Client Needs

S/N	Category	Count	Percentage
1	Storage	92	86.79
2	Transportation	39	36.79
3	Personnel	51	48.11
4	Information	47	44.34
5	Capital	33	31.13
6	Other	3	2.83

Nationally, UBOS (2024) highlighted that **43% of rural households** cited poor feeder roads as the primary barrier to market access. Subregional findings are consistent: in Kenya, poor rural roads raised maize transport costs by **20% in 2023** (KALRO, 2023), while in Tanzania, weak rice storage infrastructure resulted in post-harvest losses of **23%** (FAO & IFPRI, 2022). Regionally, the East African Grain Council (2023) noted that inadequate

transport and storage across the EAC reduces grain competitiveness by up to **30%.** Globally, the World Bank (2023) estimates that poor rural infrastructure costs developing countries nearly **US$48 billion annually** in lost agricultural value, underscoring the urgency for strategic infrastructure investment.

4.3.2 High Post-Harvest Losses

The study revealed that **high post-harvest losses** are a critical challenge within Uganda's grain value chains, driven by inadequate drying, cleaning, grading, and packaging facilities. While **86.8% of respondents** reported having some storage capacity (Table 6), most facilities were basic and lacked essential features such as **moisture control, pest-proofing, and aeration.** Consequently, grain quality and shelf life were compromised, leading to aflatoxin contamination, reduced marketability, and rejection in quality-sensitive domestic and export markets. Farmers also highlighted the absence of affordable equipment for drying, cleaning, grading, and packaging, further restricting entry into structured trade systems.

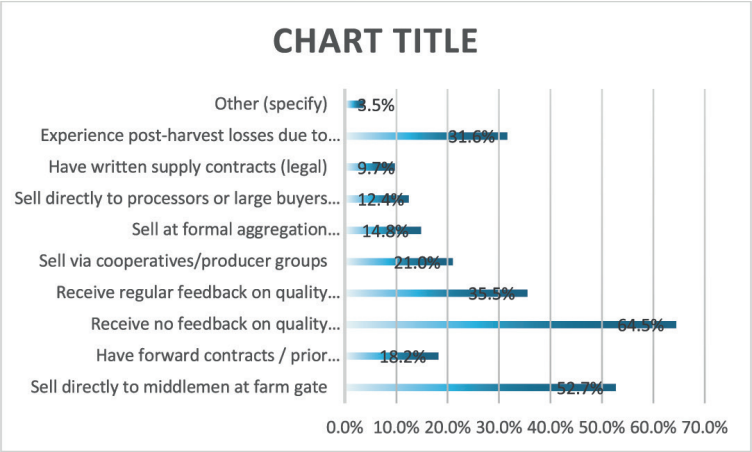
At the national level, UBOS (2024) estimated that Uganda loses **30% of maize** and **25% of beans** post-harvest annually. Sub regionally, Kenya records maize losses of **20–30%** due to poor drying and storage (KALRO, 2023), while in Tanzania, rice losses average **23%** under traditional storage (FAO & IFPRI, 2022). Regionally, the EAC (2023) warned that post-harvest losses cost East African farmers **over US$4 billion annually,** reducing competitiveness in regional markets. Internationally, the FAO (2022) estimated that **14% of global food** is lost before reaching retail, with Africa disproportionately affected by weak storage and handling infrastructure. Addressing these losses is essential for improving food security, farmer incomes, and export readiness.

4.3.3 Dependence on Middlemen

The study revealed that the absence of **structured aggregation systems** forces many farmers to rely heavily on middlemen, weakening their bargaining power and reducing farm-gate prices. As illustrated in **Figure 12, 52.7% of farmers** reported selling directly to middlemen at the farm gate, while only **18.2%** had forward contracts or prior agreements with buyers. This lack of structured trade prevents farmers from planning production to meet market standards and contributes to post-harvest losses and exploitation. Furthermore, **64.5% of respondents** indicated they receive no feedback on quality requirements, making it difficult to align production with consumer and export demand.

Nationally, UBOS (2024) reported that over **60% of smallholder farmers** in Uganda depend on informal traders, limiting access to higher-value markets. Subregional evidence confirms similar trends: in Kenya, **55% of maize farmers** sell to brokers due to weak cooperative structures (KALRO, 2023), while in Tanzania, FAO & IFPRI (2022) found that rice farmers lose up to **20% of value** when relying on middlemen. Regionally, the East African Grain Council (2023) estimated that lack of structured aggregation reduces farmer earnings by **15–25%.** Internationally, the World Bank (2023) noted that weak farmer–buyer linkages in Africa cost the continent **over US$30 billion annually** in lost agricultural value.

Figure 12: Market Access

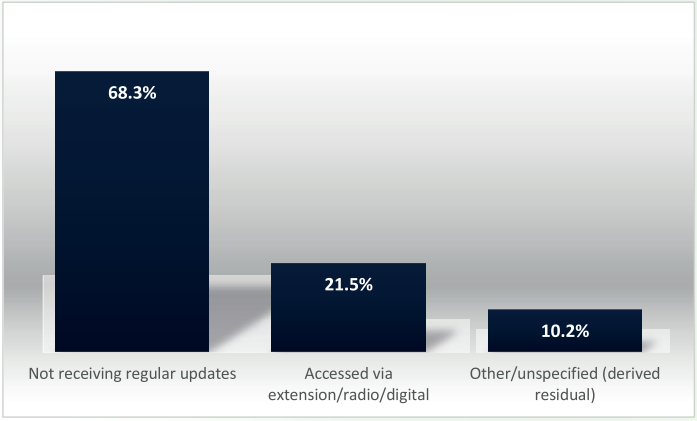


4.3.4 Limited Market Information Systems

The study revealed that access to **timely and reliable market information** remains a critical gap for farmers and traders in Eastern Uganda. As shown in **Figure 13**, over **68.3% of respondents** reported not receiving regular updates on prices, demand trends, or product standards, while only **21.5%** accessed such information through extension agents, radio, or digital platforms. This lack of information undermines decision-making, weakens bargaining power, and leaves farmers vulnerable to exploitation by middlemen. The absence of structured price intelligence also limits participation in high-value markets that demand compliance with specific quality standards.

At the national level, UBOS (2024) found that fewer than **30% of Ugandan smallholders** regularly receive agricultural market information, despite government investments in e-extension platforms. Subregional evidence shows similar trends: in **Kenya,** KALRO (2023) reported that only **25% of maize farmers** access real-time market data, while in **Tanzania,** FAO & IFPRI (2022) found that less than **20% of rice farmers** had knowledge of cross-border market standards. Regionally, the East African Grain Council (2023) noted that weak market information systems reduce East African grain producers' competitiveness by **20–30%.** Globally, the World Bank (2023) emphasized that inadequate agricultural market information systems cost developing countries nearly **US$6 billion annually** in lost trade opportunities.

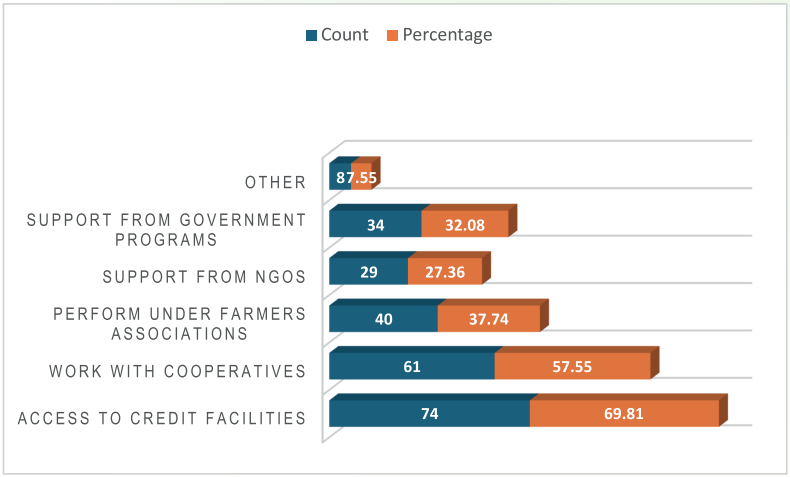
Figure 13: Access to timely Market Information



4.3.5 Financial Constraints

The study found pervasive **credit constraints** along the grain value chains. As shown in **Figure 14, 58.2%** of respondents had **never received financial or logistical support,** only **31.13%** reported **access to capital**, and **69.81%** relied on credit to overcome capacity gaps—often at **high interest** and with **requirements misaligned** to agricultural seasons. Although the **Bank of Uganda–managed Agricultural Credit Facility (ACF)** caps interest at **≤12% p.a.**, with **tenors up to 8 years** and **grace periods up to 3 years**, participating banks commonly enforce **monthly repayment schedules** that strain farm cashflows (BMAU/MoFPED, 2013; Centenary Bank, n.d.; TheCooperator, 2023). Sector diagnostics similarly show **monthly** as the most frequent repayment frequency, reinforcing short-cycle financing unsuited to long-gestation on-farm and processing investments (Uganda Agribusiness Alliance, 2017).

Figure 14: Strategies Used by Value Chain Actors to Overcome Capacity Challenges



National and comparative evidence aligns with these results. FAO (2025) notes that improved access to credit in Uganda **doubles fertilizer use** and boosts yields, yet most smallholders remain **credit constrained.** Subregionally, Kenya recorded **~12%** production-cost increases linked to input-VAT financing burdens (KALRO, 2023), while in Tanzania, finance terms and duties slowed rice intensification (FAO & IFPRI, 2022). Regionally, weak ag-finance design depresses EAC agribusiness performance (EAC, 2023). Internationally, the World Bank stresses that **products tailored to crop cycles** (seasonal/balloon repayments, longer tenors, asset-backed lending) are pivotal to unlock private investment in value addition (World Bank, 2024, 2023).

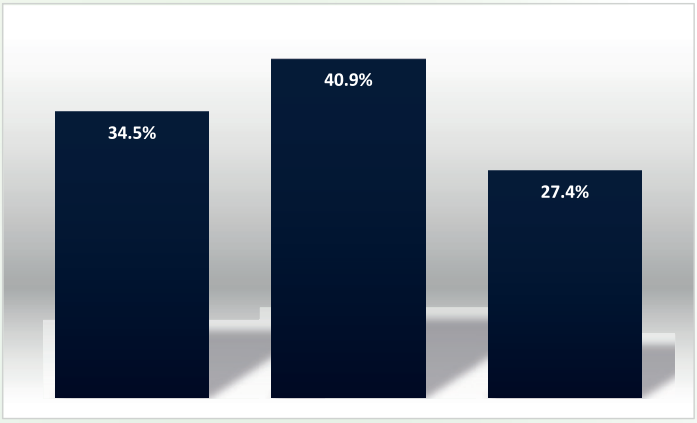
Overall, **limited agriculture-tailored credit**—including **monthly repayment norms**—pushes farmers to **sell immediately after harvest** at low prices, suppressing reinvestment in **inputs, storage, and processing** and stunting competitiveness.

4.3.6 Low Levels of Collective Action

The study revealed persistently **low levels of collective action** among producers in Eastern Uganda, limiting their bargaining power, economies of scale, and access to structured markets. As illustrated in **Figure 15,** only **34.5% of respondents** belonged to structured groups such as cooperatives, farmer associations, or processing networks, while **40.9%** operated independently, citing lack of trust, weak governance, or limited awareness of the benefits of collaboration. Furthermore, only **27.4%** reported attending a multi-stakeholder forum, training, or coordination meeting in the past year, reflecting weak engagement across the value chain.

At the national level, UBOS (2024) reported that less than **38% of Ugandan farmers** are members of cooperatives, a trend consistent with the study's findings. Subregionally, KALRO (2023) found that **42% of Kenyan maize farmers** worked through cooperatives, while in Tanzania, FAO & IFPRI (2022) estimated cooperative participation at **35%,** often constrained by governance issues. Regionally, the East African Grain Council (2023) noted that fragmented farmer organization reduces EAC grain competitiveness by **20–25%.** Globally, the World Bank (2023) emphasized that collective action is critical for reducing transaction costs and improving farmer access to finance, markets, and inputs—yet remains underdeveloped across much of Sub-Saharan Africa.

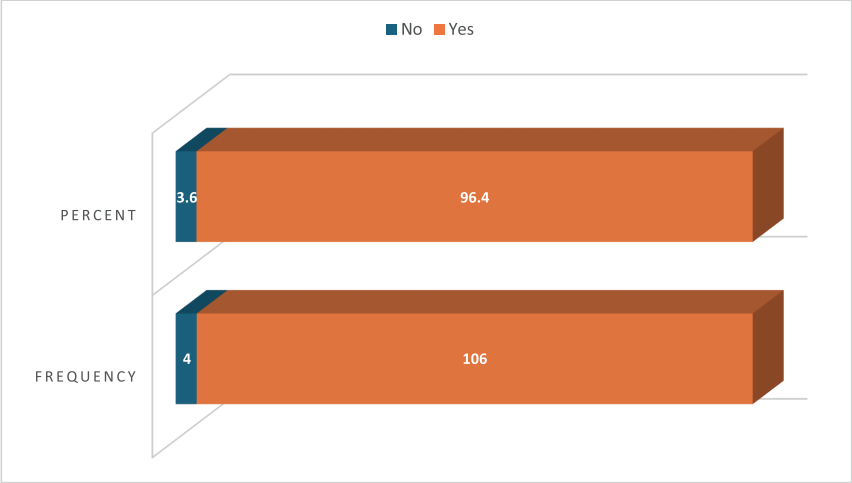
Figure 15: Levels of Collective Action



4.3.7 Limited Value Addition Capacity

The study found that despite strong recognition of its benefits, **value addition capacity remains severely limited** among farmers and SMEs in Eastern Uganda. As shown in **Figure 9, 96.4% of respondents** acknowledged that value addition improves market access and business performance, while **79.1% (Table 9**) cited access to processing equipment as the most critical intervention to strengthen value chains. Yet, barriers such as limited investment capital, inadequate technical know-how, and lack of rural processing hubs prevent most actors from moving beyond raw commodity sales.

Figure 16: Value addition to Maize, Rice, and Beans is profitable to Business



Respondents identified **milling, packaging, branding, and certification** as key opportunities to improve competitiveness, increase returns, and generate employment. However, only a minority currently benefit from such services, leaving the majority excluded from high-value markets. Nationally, UBOS (2024) reported that fewer than **20% of agro-SMEs** in Uganda engage in value addition. Subregional evidence reflects similar gaps: in Kenya, only **25% of maize farmers** access formal milling and packaging (KALRO, 2023), while in Tanzania, FAO & IFPRI (2022) observed that rice farmers struggle to meet export standards due to poor processing. Regionally, the EAC (2023) emphasized that weak value addition reduces grain export competitiveness by 30–40%, while globally, the World Bank (2023) estimated that Africa processes less than **20% of its agricultural output,** compared to over **60% in Asia,** constraining growth in trade and employment.

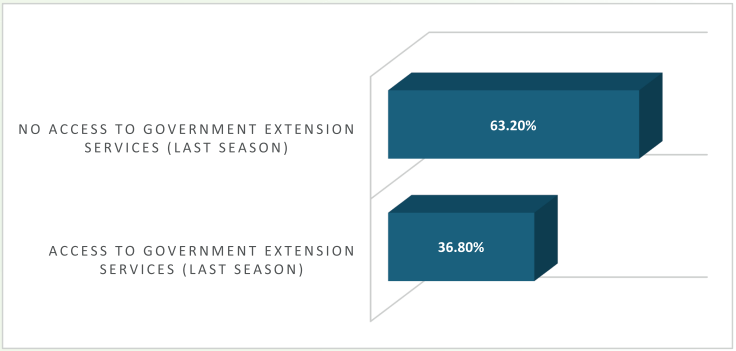
4.3.8 Weak Extension and Support Services

The study revealed that **weak extension and support services** significantly constrain productivity and compliance in Uganda's maize, rice, and beans value chains. As shown in **Figure 17**, only **36.8% of respondents** reported access to government extension services during the last season, leaving the majority without guidance on agronomic practices,

quality compliance, or post-harvest handling. Uganda's farmer-to-extension worker ratio remains extremely high, estimated at **1:5,000,** compared to the FAO recommendation of **1:500** (UBOS, 2024). This gap limits the capacity of farmers to adopt improved practices, undermining competitiveness in structured markets.

Nationally, the Ministry of Agriculture has acknowledged that inadequate staffing and resources continue to weaken extension delivery (UBOS, 2024). Subregional studies confirm similar challenges: in **Kenya,** only **41% of smallholder farmers** reported receiving extension support in 2023 (KALRO, 2023), while in **Tanzania,** FAO & IFPRI (2022) found that less than **35% of rice farmers** accessed training on improved production or compliance standards. Regionally, the East African Grain Council (2023) noted that insufficient extension services reduce adoption of quality standards by nearly **30%** across the EAC. Internationally, the World Bank (2023) estimated that weak extension systems cost Sub-Saharan Africa up to **US$2 billion annually** in unrealized productivity gains.

Figure 17: Access to extension and support services



4.4 Suggested solutions from stakeholders

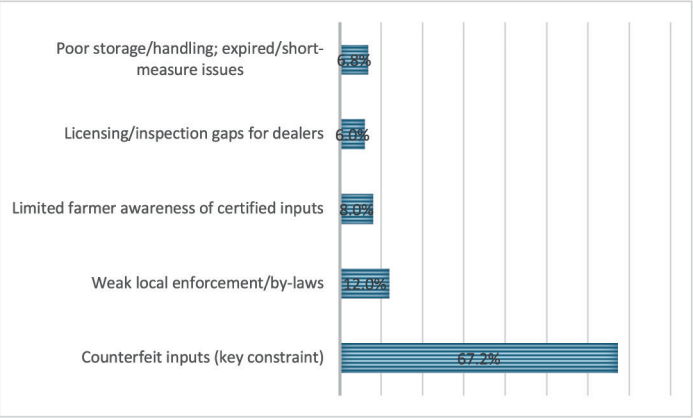
4.4.1 Strengthen Regulation of Agro-Input Dealers and Enforce Quality Standards

Stakeholders recommended the **strengthening of regulatory oversight of agro-input dealers** and strict enforcement of quality standards across the maize, rice, and beans value chains. As shown in **Figure 18, 67.2% of respondents** highlighted counterfeit inputs as a key constraint, underscoring the urgency of enhancing monitoring systems. Recommendations included digital traceability tools, licensing of all input dealers, regular inspections by the Uganda National Bureau of Standards (UNBS), and farmer awareness campaigns on certified products.

At the **national level,** UBOS (2024) reported that counterfeit and substandard inputs reduce crop yields in Uganda by up to 30%, while MAAIF (2023) noted that only **45% of agro-input outlets** were formally registered, leaving a large informal market vulnerable to abuse. Subregional evidence shows similar challenges: in **Kenya,** KALRO (2023) estimated that counterfeit seeds lower maize output by 20%, and in **Tanzania,** FAO & IFPRI (2022) observed that substandard fertilizer significantly constrains rice productivity. At the

regional level, the East African Grain Council (2023) estimated that weak enforcement of input quality standards costs East African farmers more than **US$1.2 billion annually**, while the **East African Community (2023)** emphasized the need to harmonize agro-input regulations to reduce trade distortions and improve competitiveness. At the **international level,** the World Bank (2023) and FAO (2022) stressed that stronger enforcement of agro-input standards could close Africa's agricultural yield gap by **20–25%,** significantly boosting food security, farmer incomes, and regional trade opportunities.

Figure 18: Farmer-Reported Agro-Input Constraints

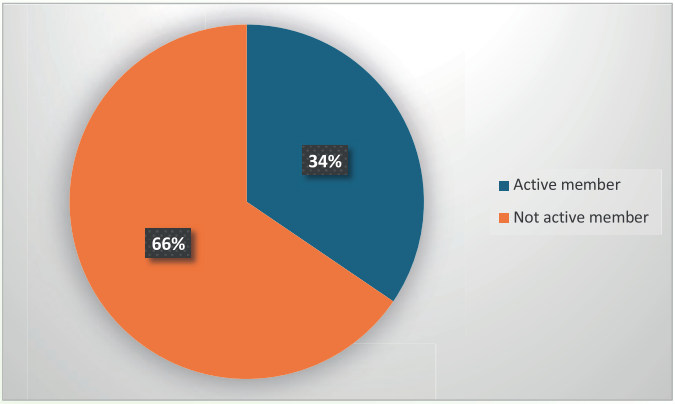


4.4.2 Revive Cooperatives via Governance Reforms, Capacity Building, Financial Literacy

Stakeholders recommended the **revival and strengthening of farmer cooperatives** to improve aggregation, bargaining power, and access to structured markets. As shown in **Figure 19,** only **34.5% of respondents** reported belonging to active cooperatives or farmer associations, while many cited weak governance, limited transparency, and political interference as barriers to effective participation. To address these gaps, stakeholders proposed governance reforms, leadership training, and financial literacy programs to enhance accountability and improve access to credit and collective marketing systems.

At the **national level,** UBOS (2024) found that fewer than **40% of registered cooperatives** in Uganda are fully functional, with mismanagement a key cause of collapse. Subregional evidence reflects similar trends: in **Kenya,** cooperative corruption scandals reduced farmer trust, leading to declining membership (KALRO, 2023), while in **Tanzania,** FAO & IFPRI (2022) reported that hereditary leadership structures constrained youth engagement in rice cooperatives. Regionally, the **East African Grain Council (2023)** emphasized that weak cooperative governance reduces farmer participation in structured trade by nearly **30%.** Internationally, the **World Bank (2023)** highlighted that strong, transparent cooperatives can increase farmer incomes by **20–25%,** reduce transaction costs, and expand access to finance and high-value markets.

Figure 19: Active Membership in Cooperatives or Farmer Associations

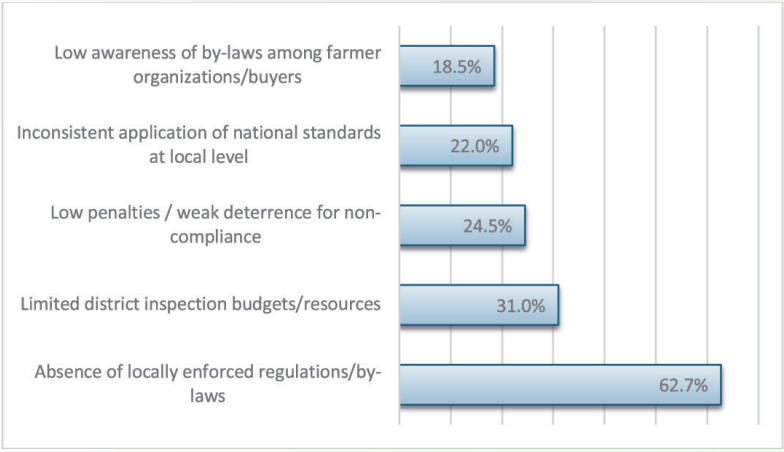


4.4.3 Develop Ordinances and By-Laws to Enforce Quality Standards, Cooperative Accountability, and Input Certification

Stakeholders recommended the formulation of **district-level ordinances and by-laws** to strengthen enforcement of quality standards, enhance cooperative accountability, and regulate agro-input certification. As shown in **Figure 20, 62.7% of respondents** noted that the absence of locally enforced regulations contributed to market distortions, counterfeit inputs, and weak compliance with national standards. By-laws were seen as critical for ensuring farmer organizations operate transparently, buyers adhere to agreed quality standards, and input dealers are licensed and monitored by local authorities.

At the **national level,** UBOS (2024) reported that over **45% of agro-input outlets** remain unregistered, exposing farmers to counterfeit products. Subregional findings echo this concern: in **Kenya**, KALRO (2023) found that weak enforcement of seed certification contributed to a **20% decline in maize yields,** while in **Tanzania,** FAO & IFPRI (2022) observed that lack of cooperative by-laws reduced farmer participation in structured rice markets. Regionally, the **East African Grain Council (2023)** emphasized that harmonized by-laws and ordinances could improve EAC-wide enforcement of grain standards, reducing post-harvest losses and trade disputes. Internationally, the **World Bank (2023)** and **FAO (2022)** stressed that strong local legal frameworks are essential for safeguarding value chains, with potential to increase farmer incomes by **15–20%.**

Figure 20: Cause of Market failures

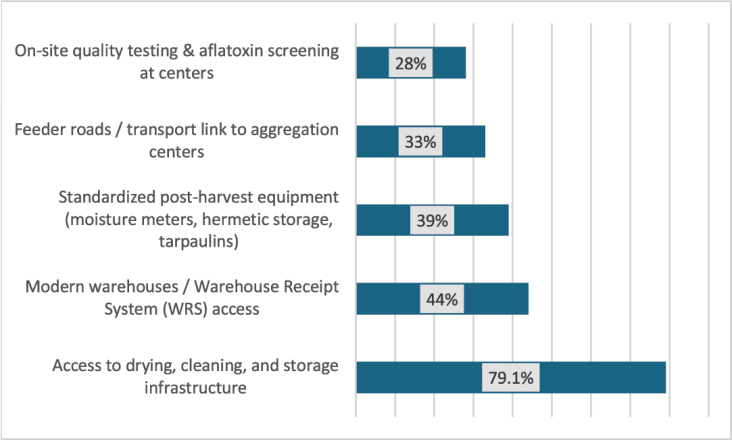


4.4.4 Invest in Aggregation Centers, Warehouse Facilities, and Standardized Post-Harvest Equipment

Stakeholders strongly recommended increased **investment in aggregation centers, warehouse facilities, and standardized post-harvest equipment** as a means to reduce losses, enhance quality, and strengthen access to structured markets. As shown in **Figure 21, 79.1% of respondents** highlighted access to drying, cleaning, and storage infrastructure as the most critical intervention for improving value chains. Poor storage, identified by **86.8% of actors** (Table 6), contributes to high post-harvest losses and aflatoxin contamination, which in turn limit exports and access to institutional buyers.

At the **national level**, UBOS (2024) estimated that Uganda loses **30% of maize** and **25% of beans** annually due to inadequate storage and handling. Subregional findings are consistent: in **Kenya**, post-harvest maize losses range from **20–30%** (KALRO, 2023), while in **Tanzania**, FAO & IFPRI (2022) reported rice losses of **23%** linked to poor warehousing. Regionally, the **East African Grain Council (2023)** estimated that weak aggregation and storage infrastructure reduce EAC grain competitiveness by **20–25%.** Internationally, the **World Bank (2023)** and **FAO (2022)** stressed that investing in modern warehouse receipt systems and post-harvest equipment could reduce food losses globally by **14%,** boosting farmer incomes and food security.

Figure 21: Critical intervention for improving value chains

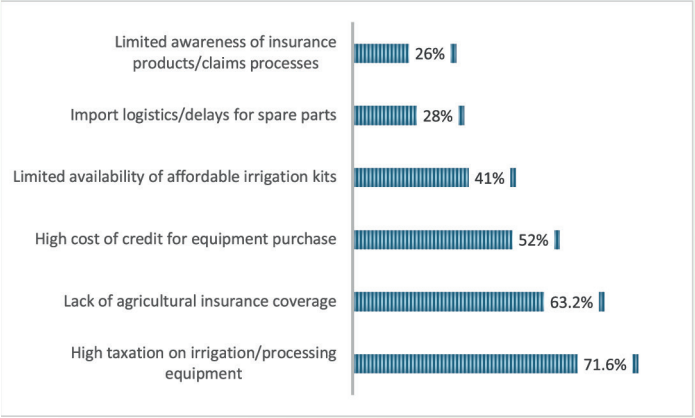


4.4.5 Reduce Taxation on Irrigation and Agro-Processing Equipment While Expanding Agricultural Insurance Coverage

Stakeholders recommended the **reduction of taxes on irrigation systems and agro-processing equipment,** alongside the **expansion of agricultural insurance coverage**, to encourage long-term investment and mitigate risks in Uganda's grain sector. As shown in **Figure 22, 71.6% of respondents** cited high taxation as a barrier to acquiring machinery, while **63.2%** identified lack of insurance as a major vulnerability to climate shocks. Currently, Uganda applies an **18% VAT** and import duties ranging from **10–25%** on irrigation equipment and machinery, costs that discourage mechanization (URA, 2025).

At the **national level,** UBOS (2024) highlighted that less than **2% of arable land** in Uganda is irrigated, far below potential. Subregionally, similar patterns exist: in **Kenya**, irrigation covers only **3% of arable land,** constrained by equipment costs (KALRO, 2023), while in **Tanzania,** import taxes continue to slow adoption of mechanized rice production (FAO & IFPRI, 2022). Regionally, the **East African Community (2023)** noted that costly machinery and weak insurance uptake reduce agricultural competitiveness by **20%**. Internationally, the **World Bank (2023)** emphasized that reducing tax burdens on irrigation and processing equipment, paired with crop insurance, could boost farmer resilience and increase yields by **15–25%** in Sub-Saharan Africa.

Figure 22: Perceived Constraints to Farm Equipment Uptake

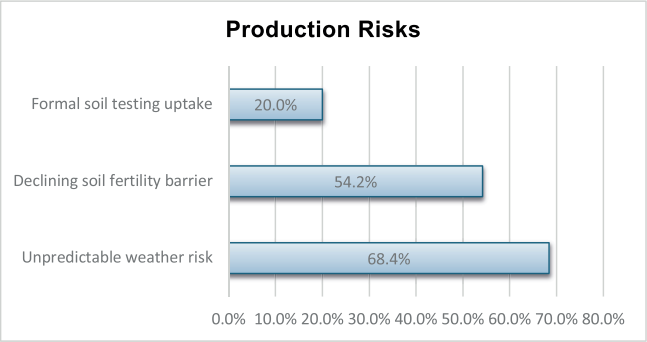


4.4.6 Support Climate-Smart Agriculture, Soil Testing, and Tree Planting for Resilience

Stakeholders emphasized the need to scale up **climate-smart agriculture (CSA), soil testing services, and tree planting** as key strategies for building resilience in Uganda's maize, rice, and beans value chains. As shown in **Figure 23, 68.4% of respondents** identified unpredictable weather as a major production risk, while **54.2%** noted declining soil fertility as a barrier to yields. Yet, fewer than **20%** had ever accessed formal soil testing services. Stakeholders recommended expanding CSA practices—such as drought-tolerant seeds, water harvesting, and conservation tillage—alongside reforestation and agroforestry initiatives to improve soil health and reduce erosion.

At the **national level,** UBOS (2024) reported that climate shocks reduce Uganda's grain output by **15–20% annually.** Subregional evidence shows similar trends: in **Kenya**, CSA adoption improved maize yields by 23% under drought conditions (KALRO, 2023), while in **Tanzania,** FAO & IFPRI (2022) found that rice farmers using soil testing increased productivity by **18%.** Regionally, the **East African Community (2023)** emphasized that tree planting and CSA practices are essential to meeting EAC climate adaptation goals. Internationally, the **World Bank (2023)** estimated that scaling CSA across Sub-Saharan Africa could cut climate-related yield losses by **up to 30%,** while enhancing carbon sequestration and food security.

Figure 23: Reported production risks

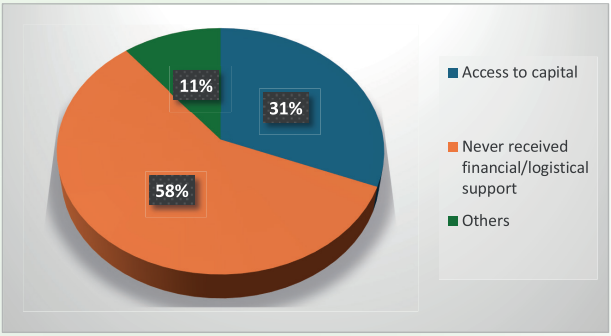


4.4.7 Improve Access to Affordable Financing through Cooperative Banks, SACCOs, and Tailored Credit Products

Stakeholders highlighted the urgent need to **expand affordable and agriculture-tailored financing** through cooperative banks, SACCOs, and specialized credit products for smallholders and SMEs. As shown in **Figure 24,** only **31.1% of respondents** reported access to capital, while **58.2%** indicated they had never received financial or logistical support to strengthen their market participation. Stakeholders proposed scaling cooperative banking models, strengthening SACCO governance, and introducing tailored credit products with **seasonal repayment schedules** to align with agricultural cycles.

At the **national level,** UBOS (2024) reported that more than **65% of Ugandan farmers** remain excluded from formal finance, relying on informal lenders who charge exploitative interest rates. Subregional data show similar challenges: in **Kenya,** KALRO (2023) found that only **28% of maize farmers** accessed affordable credit, while in **Tanzania,** FAO & IFPRI (2022) noted that limited access to tailored credit products constrained rice sector growth. Regionally, the **East African Community (2023)** estimated that inadequate financing reduces agribusiness competitiveness by **20–25%.** Internationally, the **World Bank (2023)** stressed that strengthening agricultural finance through SACCOs and cooperative banks could increase smallholder investment by 30%, boost productivity, and improve resilience across Sub-Saharan Africa.

Figure 24: Access to Affordable Financing

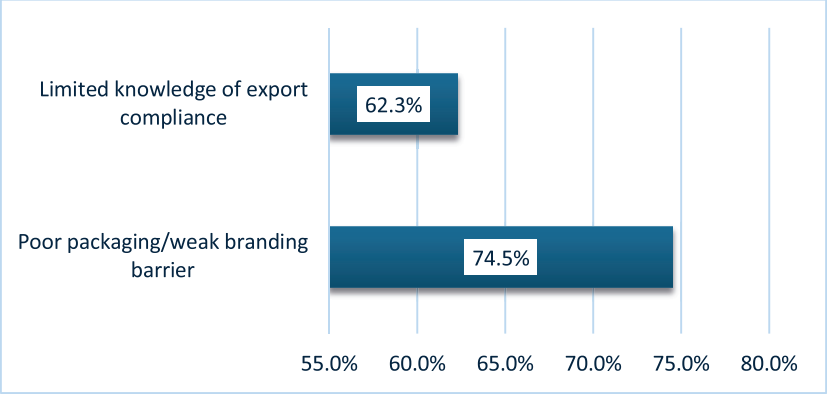


4.4.8 Promote Capacity Building in Branding, Packaging, and Compliance to Meet Local and Export Standards

Stakeholders recommended targeted **capacity building in branding, packaging, and compliance** as a strategy to strengthen competitiveness of maize, rice, and beans in both domestic and export markets. As shown in **Figure 25, 74.5% of respondents** identified poor packaging and weak branding as barriers to accessing supermarkets and regional buyers, while **62.3%** cited limited knowledge of export compliance requirements. Stakeholders proposed training farmers and SMEs on branding, labeling, and certification standards, coupled with investment in affordable packaging technologies.

At the **national level,** UBOS (2024) reported that fewer than **20% of Ugandan agro-SMEs** comply with Uganda National Bureau of Standards (UNBS) requirements, reducing access to structured markets. Subregional evidence shows similar gaps: in **Kenya,** only **25% of smallholder maize processors** meet formal packaging standards (KALRO, 2023), while in **Tanzania,** FAO & IFPRI (2022) highlighted that inadequate branding limited rice exports despite high production. Regionally, the **East African Grain Council (2023)** estimated that poor compliance with packaging and labeling reduces EAC grain export potential by **US$600 million annually.** Internationally, the **World Bank (2023)** emphasized that improved branding and compliance could increase African agricultural exports by **20–25%,** boosting farmer incomes and global competitiveness.

Figure 25: Barriers to Market Access



CHAPTER 5

Recommendations

In this chapter

- Strengthening legal and Regulatory frameworks
- Addressing Non-Tariff Barriers (NTBs)
- Infrastructure and Value Addition Investments
- Enhancing Seed Systems and Input Access
- Strengthening Institutions, Cooperatives, and Access to Finance
- Digital Market Intelligence and Trade Facilitation

5 RECOMMENDATIONS

5.1 Strengthening Legal and Regulatory Frameworks

The study highlighted persistent challenges in Uganda's grain trade environment. **44.5% of respondents stressed the urgent need for stronger legal protections for traders,** underscoring the vulnerability of market actors to unfair practices. In addition, **42.7% advocated for tax reductions** to ease market entry and participation. Respondents also pointed to **heavy compliance burdens, duplicative licensing fees, and frequent harassment at roadblocks,** which significantly increase transaction costs. For instance, traders reported that some levies and informal payments raise the cost of moving grain by up to **UGX 50–100 per kilogram,** reducing both competitiveness and profitability.

Policy Recommendations:

i. **Community sensitization:** Scale up legal and policy literacy through farmer groups, radio programs, digital platforms, and school curricula, targeting over **70% of rural households** engaged in grain trade. This would improve awareness of standards, trader rights, and cross-border trade rules.

ii. **Reducing compliance burdens:** Simplify trade licensing procedures and eliminate duplicative local government fees. Streamlined systems could save cooperatives and SMEs up to **15–20% in annual operating costs.**

iii. **Fair taxation:** Introduce farmer- and trader-protection policies that ensure equitable taxation and curb exploitation. Predictable and fair tax regimes could boost formalization rates beyond the current **38% of cooperatives undergoing external audits.**

iv. **Regulatory harmonization:** Align district-level regulations to remove multiple levies and unpredictable charges, which currently contribute to Uganda's estimated **UGX 210 billion annual loss from informal cross-border trade.**

v. **Inclusive dialogue:** Institutionalize multi-stakeholder forums between policymakers, farmers, traders, and cooperatives. Regular dialogue will ensure that policies remain grounded in market realities and responsive to the evolving needs of value chain actors.

5.2 Addressing Non-Tariff Barriers (NTBs)

The study revealed that **68% of respondents identified non-tariff barriers (NTBs)**—including roadblocks, informal levies, and police harassment—as major obstacles to grain trade. On the **Busia–Kenya route,** traders reported encountering **5–7 roadblocks per journey,** which added an average of **UGX 200,000 per truck** in extra costs. These barriers not only reduce profit margins but also discourage formal cross-border trade, undermining Uganda's competitiveness in regional markets.

Policy Recommendations:

i. **Awareness on informal fees:** Strengthen legal and rights-based awareness among farmers and traders to minimize vulnerability to harassment and exploitation.

ii. **Enforcement of EAC frameworks:** Fully implement the **EAC NTB Monitoring Mechanism** and the **Simplified Trade Regime (STR)** to protect small-scale traders and streamline cross-border transactions.

iii. **Simplified licensing and compliance:** Develop practical **"NTB Toolkits"** and training programs to help farmers and traders understand and navigate compliance requirements both domestically and regionally, thereby lowering transaction costs.

5.3 Infrastructure and Value Addition Investments

The study highlighted critical infrastructure and value addition gaps. **79.1% of respondents called for increased access to value addition equipment,** citing limited processing capacity for maize and rice as a barrier to competitiveness. In addition, **71% identified poor rural roads and inadequate storage facilities** as major causes of post-harvest losses. A recurring concern was the lack of access to **3-phase electricity,** which restricts the establishment and operation of medium- to large-scale milling and processing units in rural areas. This energy gap has slowed the growth of agro-processing and diminished farmers' ability to tap into higher-value markets.

Policy Recommendations:

i. **Agro-processing hubs:** Establish rural community-based processing hubs and agro-industrial parks through **public–private partnerships (PPPs)** to expand access to modern milling, drying, and packaging facilities.

ii. **Subsidized access to equipment:** Promote cooperative ownership models or leasing schemes for dryers, graders, mills, and packaging units, enabling smallholders to collectively invest in value addition.

iii. **Energy access for processing:** Prioritize rural electrification with a focus on expanding **3-phase power lines** to farming and trading clusters, ensuring reliable energy for maize and rice processing**.**

iv. **Warehouse receipt systems:** Scale up structured trade financing through warehouse receipt systems to reduce post-harvest exploitation and enhance farmers' bargaining power.

v. **Rural infrastructure development:** Invest in feeder roads, silos, and warehouses to cut transport costs, improve market connectivity, and reduce post-harvest losses.

5.4 Enhancing Seed Systems and Input Access

The study revealed significant constraints in Uganda's seed and input systems. 75.5% of respondents stressed the urgent need for access to certified seed, while 57.3% highlighted fertilizers and soil fertility management as critical to improving yields. However, the system is undermined by widespread counterfeit agro-inputs, which continue to erode farmer confidence and productivity. District Local Governments (DLGs) reported that while they are closest to the farmers, they lack both the legal mandate and financial resources to arrest or prosecute counterfeit agro-input dealers in their jurisdictions. In addition, respondents pointed to the complex and lengthy processes for certification

of agro-input dealers, which discourages compliance and drives more players into the informal market.

Policy Recommendations:

i. **Seed access:** Strengthen partnerships with certified seed companies, enforce anti-counterfeit measures, and expand support for community seed banks to enhance farmer access to genuine seed.

ii. **Mandating DLG enforcement:** Provide DLGs with **clear legal authority and dedicated budgetary resources** to identify, arrest, and prosecute counterfeit agro-input dealers, ensuring enforcement at the grassroots level.

iii. **Streamlined certification processes:** Simplify and decentralize the certification of agro-input dealers to improve compliance and ensure wider distribution of genuine products.

iv. **Input subsidies:** Target vulnerable households with fertilizer and digital e-subsidy programs to enhance affordability and adoption.

v. **Integrated soil fertility management (ISFM):** Strengthen extension services to promote balanced use of fertilizers, organic amendments, and soil conservation practices.

vi. **Last-mile agro-dealers:** Develop and support rural input dealer networks to reduce distances farmers travel to access quality seed and fertilizers.

5.5 Strengthening Institutions, Cooperatives, and Access to Finance

The study underscored the central role of institutions and finance in driving competitiveness in Uganda's grain sector. **57.6% of respondents emphasized the importance of cooperatives,** while **37.7% pointed to farmer associations** as critical platforms for collective action. In addition, **69.8% identified access to credit as essential for scaling operations,** particularly for investing in improved production, storage, and value addition. Weak governance, limited financial literacy, and overlapping institutional mandates further constrain the efficiency and sustainability of these structures.

Policy Recommendations:

i. **Cooperative strengthening:** Enhance cooperative capacity in governance, leadership, financial management, and legal registration to improve accountability and sustainability.

ii. **Finance access:** Expand tailored agribusiness financing through SACCOs, MFIs, warehouse receipt systems, and guarantee funds to unlock affordable credit for farmers and cooperatives.

iii. **Institutional coordination:** Clarify and streamline the roles of agencies such as **UNBS, MAAIF, and district authorities** to reduce duplication, lower compliance costs, and enhance service delivery.

iv. **Business development services (BDS):** Scale up training in entrepreneurship, financial planning, record keeping, and contract farming models to strengthen the commercial viability of farmer organizations.

5.6 Digital Market Intelligence and Trade Facilitation

The study revealed significant gaps in market intelligence and trade facilitation. **69.1% of respondents cited poor access to reliable market information,** while only **10% reported frequently using legal or market data** in decision-making. This information deficit weakens farmers' and traders' bargaining power, exposes them to exploitation, and limits their participation in structured markets and regional trade opportunities.

Policy Recommendations:

i. **Digital platforms:** Scale up mobile-based systems that provide timely updates on prices, weather forecasts, and regulatory alerts, tailored to the needs of smallholder farmers and traders.

ii. **Extension as brokers:** Equip extension officers to act as intermediaries by interpreting digital market intelligence and translating it into actionable advice for farming communities.

iii. **Community radios:** Leverage radio programs delivered in local languages to enhance awareness of market trends, regulations, and policy reforms.

iv. **Digital finance and trade systems:** Expand access to digital solutions such as e-subsidies, mobile banking, digital warehouse receipt systems, and ICT integration into structured trade platforms, including the EAC Grain Trade Platform, to facilitate transparency and cross-border trade efficiency.

CHAPTER 6

Conclusions & References

In this chapter

- Conclusions
- References

6 CONCLUSION

This study has demonstrated that the maize, rice, and beans value chains in Eastern Uganda—though central to food security, household incomes, and regional trade—remain significantly constrained by systemic policy, institutional, and market bottlenecks. Agriculture continues to employ over **70% of Uganda's population** and contributes **24.1% to GDP (UBOS, 2024),** yet post-harvest losses of up to **30% in maize** and **25% in beans** persist, driven by weak storage, poor drying facilities, and inadequate aggregation systems.

Findings reveal that **77.3% of farmers and traders lack awareness of laws** governing grain trade, while only **10% of respondents frequently use legal or market data** in decision-making. This policy illiteracy, coupled with fragmented regulations, unfair taxation, and porous borders, reduces competitiveness and costs Uganda an estimated **UGX 210 billion annually** through informal cross-border grain trade. At the same time, weak cooperative governance—where less than **40% of cooperatives remain functional**—has forced over **52.7% of farmers** to rely on exploitative middlemen, reducing farm-gate prices by 15–25%.

Despite these challenges, opportunities are evident. Over **87% of respondents** expressed willingness to adopt value addition practices if supported, and **96.4% acknowledged** that value addition improves market access and profitability. Furthermore, **69.8% of actors identified credit access as critical** to scaling operations, underscoring the transformative role of tailored finance, SACCOs, and warehouse receipt systems. Investments in infrastructure—particularly feeder roads, aggregation centers, warehouse facilities, and 3-phase rural electrification—are equally crucial to unlock value addition and structured trade.

The evidence points to four strategic imperatives for Uganda's grain sector. First, strengthening legal and regulatory frameworks through harmonization, fair taxation, and improved enforcement is essential to formalize trade. Second, reducing non-tariff barriers and unfair competition will expand cross-border opportunities under the **EAC** and **AfCFTA**. Third, scaling climate-smart agriculture, seed systems, and irrigation—currently accessible to only **2% of arable land**—will enhance resilience against climate shocks. Fourth, digital trade platforms, community radios, and extension officers acting as brokers of market intelligence will bridge the 69% information gap identified in this study.

In conclusion, unlocking the growth potential of maize, rice, and beans requires a coordinated multi-stakeholder approach that integrates policy reform, infrastructure investment, cooperative revival, and financial innovation. By implementing these interventions, Uganda can transform its grain value chains into engines of **inclusive growth, regional competitiveness, and export diversification,** positioning Eastern Uganda as a hub for structured grain trade within East Africa and beyond.

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