



Unravelling the Constraints Associated with Groundnut Marketing: A Comprehensive Review

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

This review identifies and analyzes constraints in groundnut marketing systems, particularly for smallholder farmers in developing regions. It proposes strategies to enhance efficiency, profitability, and sustainability, thereby improving farmers' livelihoods. A comprehensive literature review of

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academic journals, policy reports, and case studies identifies key constraints in groundnut marketing. The review utilizes a structured conceptual framework that encompasses supply chain structure, market dynamics, institutional and policy environments, socioeconomic factors and draws on theoretical foundations such as Transaction Cost Economics, Value Chain Analysis, Market Structure-Conduct-Performance Paradigm, Rural Livelihoods Framework, and Supply Chain Risk Management. The study also applied economic and supply chain management theories to groundnut marketing, emphasizing the relevance of Transaction Cost Economics, Value Chain Analysis, and the Market Structure-Conduct-Performance Paradigm. This theoretical framework can be adapted for other agricultural commodities facing similar constraints. The review identifies critical constraints in groundnut marketing, including fluctuating market prices, inadequate storage facilities, limited access to credit, lack of market information, and high transaction costs. These are exacerbated by poor infrastructure, fragmented supply chains, and socioeconomic barriers, indicating the need for holistic, context-specific interventions. The review suggests practical interventions including investment in infrastructure development, enhancing market information accessibility through digital platforms, fostering farmer cooperatives, and implementing price stabilization mechanisms. These measures can empower smallholder farmers, improve market access, and increase profitability. Policymakers, development agencies, and private sector stakeholders can leverage these insights to formulate targeted support programs for groundnut farmers.

Keywords: *Groundnut marketing; marketing constraints; smallholder farmers; market access; post-harvest losses; institutional support.*

1. INTRODUCTION

Groundnut, also known as peanut or *Arachis hypogaea*, is one of the most vital cash crops globally, serving as a significant source of protein, edible oil, and essential nutrients for millions of people (Li et al., 2000; Guo et al., 2011). Its cultivation spans diverse agroecological zones, making it a staple in the agricultural landscape of many countries, particularly in Africa and Asia (Upadhyaya et al., 2002). The prominence of groundnut in global trade and food security initiatives underscores its socioeconomic significance (Khan et al., 2024; Muhammad, 2014). Moreover, groundnut farming contributes substantially to the livelihoods of millions of farmers worldwide (Matanmi & Olabode, 2016; Akpo et al., 2020). Its cultivation not only provides income for farmers but also supports broader economic development goals. Improving agricultural marketing systems is essential for enhancing the livelihoods of rural farmers and achieving broader economic development goals (Alipour et al., 2014; Murthy & Naikwadi, 2015; Minot & Vargas Hill, 2007).

Groundnut marketing encompasses a range of activities from production to consumption (Mofya-Mukuka & Shipekesa, 2013), involving various stakeholders such as farmers, traders, processors, and consumers. The efficiency and effectiveness of groundnut marketing systems significantly impact the livelihoods of these stakeholders and the overall development goals

of producing regions (Nzima et al., 2014). Despite its agricultural importance, the groundnut sector grapples with multifaceted challenges, particularly concerning its marketing dynamics (Nega et al., 2015). Research has shown that groundnut growers face numerous constraints, including fluctuating market prices, inadequate storage facilities, limited access to credit, and a lack of market information (Upadhyaya & Dwivedi, 2015). These challenges can result in significant post-harvest losses and reduced profitability for farmers. Furthermore, the marketing channels for groundnuts are often characterized by a high degree of fragmentation (Tsusaka et al., 2016), with multiple intermediaries involved in the supply chain, which can reduce the share of profits that reach the primary producers (Owusu-Adjei et al., 2017; Kannusamy, 2013; Ozalp & Oren, 2023). Identifying the constraints associated with groundnut marketing is crucial for understanding the barriers that hinder efficient market participation and limit the income-generating potential of groundnut growers (Adinya, 2009; Ahmed & Idris, 2021).

1.1 Research Questions

1. What are the key constraints faced by smallholder farmers in the groundnut marketing system, and how do these constraints impact market efficiency and farmer incomes in developing regions?

2. What strategies and interventions can be proposed to overcome the identified constraints and enhance the efficiency, profitability, and sustainability of groundnut marketing for smallholder farmers?

These questions will guide the research toward identifying specific challenges within the groundnut marketing system and exploring practical solutions to address these issues.

2. CONCEPTUAL FRAMEWORK

A conceptual framework for understanding the constraints in groundnut marketing is structured around the following key components:

1. **Supply Chain Structure:** The groundnut supply chain encompasses various stages, including production, processing, transportation, and retail. Each stage involves different stakeholders such as farmers, processors, wholesalers, and retailers. Identifying the constraints at each stage is crucial for a holistic understanding (Danmaigoro et al., 2023).
2. **Market Dynamics:** The dynamics of supply and demand significantly impact groundnut marketing. Factors such as

price volatility, market access, and competition affect how groundnuts are marketed. Analyzing these dynamics provides insights into the economic environment of groundnut markets (Mango et al., 2018).

3. **Institutional and Policy Environment:** Government policies, regulations, and institutional support play a pivotal role in shaping the groundnut market (Sori, 2017). Understanding the regulatory landscape and institutional frameworks helps in identifying policy-related constraints.
4. **Socio-Economic Factors:** Socio-economic characteristics of the stakeholders, such as education, income, and access to credit, influence their participation and performance in the groundnut market (Mango et al., 2018). Examining these factors is essential to address equity and inclusiveness in marketing practices.

3. THEORETICAL FOUNDATIONS

The theoretical foundation of this review is anchored in several key theories and models from agricultural economics, supply chain management, and marketing.

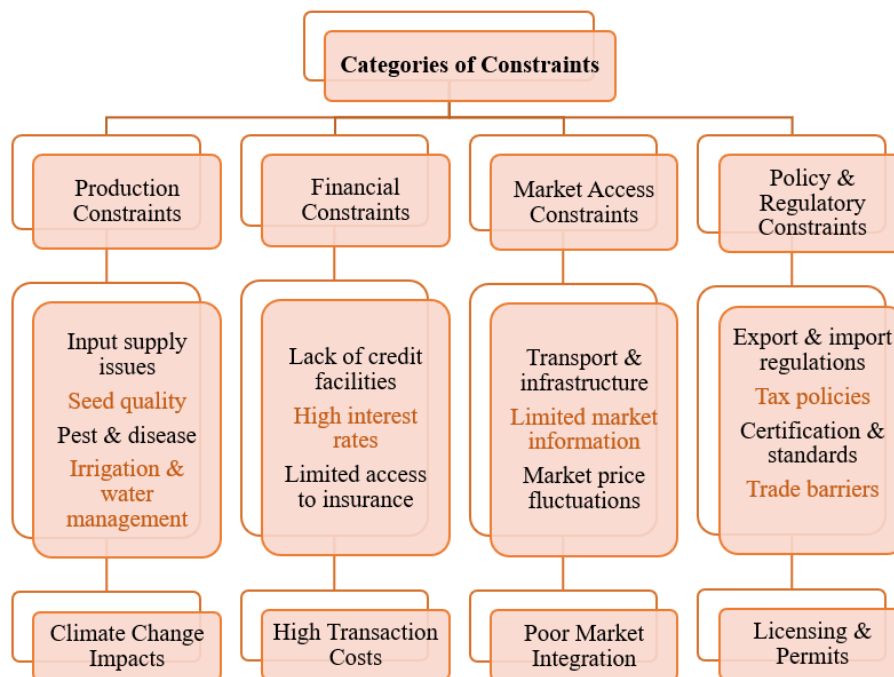


Fig. 1. Categories of constraints

(Source: Authors)

- 1. Transaction Cost Economics (TCE):** TCE focuses on the cost of transactions between different stakeholders in the supply chain. High transaction costs, such as those associated with information asymmetry, negotiation, and enforcement, can impede efficient groundnut marketing. This theory helps to identify and analyze these costs (Danmaigoro et al., 2023).
- 2. Value Chain Analysis (VCA):** VCA examines the value addition at each stage of the supply chain (Haq, 2012). By identifying where value is created and captured, VCA helps to pinpoint inefficiencies and areas for improvement in the groundnut market (Nzima et al. 2014)
- 3. Market Structure-Conduct-Performance (SCP) Paradigm:** The SCP framework explores the relationship between market structure (e.g., number of sellers, level of competition), market conduct (e.g., pricing strategies, marketing practices), and market performance (e.g., efficiency, profitability) (Gobie et al., 2019). Applying this paradigm to groundnut marketing helps to understand how market structure influences behavior and outcomes.
- 4. Rural Livelihoods Framework:** This framework considers the multiple dimensions of rural livelihoods, including financial, human, social, and physical capital (Boulay et al., 2021; Yanuartati, 2023). Understanding how groundnut marketing fits into the broader context of rural livelihoods helps to identify constraints related to resource availability and livelihood strategies.
- 5. Supply Chain Risk Management (SCRM):** SCRM involves identifying, assessing, and mitigating risks within the supply chain (Fan & Stevenson, 2018). For groundnut marketing, risks such as weather variability, pest infestations, and market fluctuations are critical (Lokesha et al., 2010). Applying SCRM principles helps to develop strategies for managing these risks (Sen & Choudhary, 2017).

These constraints may range from infrastructural challenges such as poor transportation facilities and inadequate storage infrastructure to market-related issues such as price volatility and limited market access. Social and economic factors, including lack of market information, limited bargaining power of smallholder farmers, and dependency on middlemen, also contribute to the constraints faced by groundnut growers in

marketing their produce (Baloyi, 2010). Despite its potential, the marketing of groundnuts is fraught with numerous constraints that hinder the efficiency and profitability of the sector (Subrahmanyam et al., 1999). These constraints impact not only the livelihoods of groundnut farmers but also the broader agricultural market dynamics (Usman et al., 2013; Shasani et al., 2020). Constraints associated with groundnut marketing can arise at each stage of this value chain, impacting farmers, traders, processors, and consumers alike. These constraints may stem from structural, institutional, regulatory, technological, environmental, and socio-economic factors, creating challenges that impede market efficiency, profitability, and sustainability. In many developing regions, market imperfections and inefficiencies significantly impact the livelihoods of groundnut farmers (Barrett & Mutambatsere, 2008). These challenges are compounded by factors such as poor market information systems, lack of bargaining power, and limited financial services (Shiferaw et al., 2008), which collectively reduce the competitiveness of groundnut producers in both local and international markets (Ntare et al., 2005). Addressing these constraints requires a comprehensive understanding of the marketing patterns adopted by groundnut growers and the specific barriers they encounter.

4. REVIEW OF LITERATURE

4.1 Production-Level Challenges

At the production level, challenges such as pests and diseases, erratic weather patterns, poor agronomic practices, and limited access to quality inputs often impede groundnut productivity and quality, consequently affecting marketability (Daudi et al., 2018; Dillon et al., 2021). Moreover, smallholder farmers, who form the backbone of groundnut production in many regions, face numerous socio-economic constraints, including limited access to credit, land tenure issues, and inadequate extension services (Jambo et al., 2023), which constrain their capacity to engage effectively in market-oriented production (Kumar et al., 2012).

4.2 Post-Harvest and Infrastructure Constraints

Post-harvest losses represent a significant bottleneck in groundnut value chains, with inadequate storage facilities, inefficient handling practices, and lack of access to appropriate technologies exacerbating the problem (Bisht &

Singh, 2024; Agarwal, 2017). One of the main issues is inadequate infrastructure, which includes poor transportation networks, a lack of storage facilities, and insufficient processing units (Nyondo et al., 2018). Poor infrastructure, including roads, market facilities, and transportation networks, further complicates groundnuts' timely and cost-effective movement from production areas to consumption centers, leading to market inefficiencies and reduced profitability for market actors (Chikobola, 2016).

Additionally, the lack of proper storage facilities exacerbates post-harvest losses (Sharma et al., 2014), further diminishing the quantity and quality of groundnuts available for sale (Sori et al. 2017). This not only affects the immediate income of farmers but also their ability to plan and invest in future crop cycles (Bennett et al., 2003).

4.3 Market Access and Pricing Mechanisms

Groundnut growers face specific challenges that can hinder their marketing efforts. Effective marketing is crucial for ensuring that groundnut growers can maximize their returns and sustain their farming operations (Homann-Kee Tui et al., 2016). However, groundnut marketing systems in many regions are characterized by inefficiencies and structural challenges (Gobie et al., 2019). These include inadequate market infrastructure, lack of access to market information, and the predominance of middlemen who often exploit smallholder farmers (Katunga et al., 2021). Such issues lead to reduced bargaining power for farmers and lower profit margins (Bocher & Simtowe, 2017).

Market access barriers, including limited market information, high transaction costs, and asymmetric power relations between market actors, often disadvantage small-scale farmers and traders (Singh-Peterson & Iranacolaivalu, 2018; Mango et al., 2018), hindering their ability to participate in competitive markets and capture a fair share of the value chain. Farmers often do not have access to timely and accurate information about market prices, demand trends, and potential buyers (Vineetha et al., 2018). This information asymmetry can result in farmers selling their produce at lower prices than they could potentially achieve (Courtois & Subervie, 2015; Lokanathan & De Silva, 2010; Ullah et al., 2020; Medda et al., 2017) Additionally, the lack of market information is a critical barrier (Yeshiwas & Tadele, 2021; Van Gogh & Westra, 2014; Kumar, 2015; Sambo et al., 2016).

Pricing mechanisms characterized by volatility, opaqueness, and manipulation exacerbate the risks and uncertainties faced by groundnut producers and traders, undermining their incentives for investment and market engagement. One significant constraint is the volatility of market prices, which can be attributed to fluctuating supply and demand dynamics, as well as external factors such as weather conditions and international market trends (Paciorek, 2013).

Limited access to better markets is another significant constraint (Mensah, 2012). Many groundnut growers are confined to local markets, where competition is high and prices are relatively low (Mothiba et al., 2023). Expanding market access to regional, national, and even international markets can help farmers achieve better prices (Nigam, 2000; Nakhumwa, 2015; Shinde et al., 2003). However, this requires overcoming logistical challenges and meeting stringent quality standards.

4.4 Financial and Institutional Barriers

Access to credit is another major constraint (Yehuala, 2008), as many smallholder farmers struggle to obtain the necessary financial resources to invest in improved seeds, fertilizers, and other inputs. Without adequate funding, farmers are unable to enhance their productivity and market competitiveness (Groenewald & Jordaan, 2012; Onumah & Meijerink, 2012). Furthermore, transportation challenges due to poor road networks and high transportation costs limit farmers' access to larger, more lucrative markets (McKague & Siddiquee, 2014).

Institutional barriers also play a critical role in hindering efficient groundnut marketing (Longwe-Ngwira et al., 2012). The lack of effective market information systems and weak regulatory frameworks contribute to market inefficiencies and the exploitation of farmers by middlemen (Ndjeunga et al., 2006). Additionally, market-related challenges, such as price volatility and competition from imported groundnuts, pose significant threats to the competitiveness of locally produced groundnuts (Nega et al., 2015).

4.5 Policy and Regulatory Challenges

Policy and regulatory frameworks play a crucial role in shaping the dynamics of groundnut marketing (Janaki Rani & Murugan, 2024), yet they often fall short of addressing the needs and priorities of smallholder farmers and other vulnerable actors in the value chain. Inadequate

support for market infrastructure development, limited access to market information and extension services, and policy distortions such as trade restrictions and price controls can impede market efficiency and hinder the realization of inclusive and sustainable development objectives (Nugroho, 2021; Chand, 2012; Mendoza & Thelen, 2008).

4.6 Strategies and Interventions

Holistic and Context-Specific Interventions: In light of these challenges, there is a growing recognition of the need for holistic and context-specific interventions to enhance the competitiveness, inclusiveness, and resilience of groundnut marketing systems (Longwe-Ngwira et al., 2012). Addressing these marketing challenges is crucial for enhancing the economic viability of groundnut farming (Tan et al., 2020; Idoko & Sabo, 2014).

Such interventions may encompass a range of measures, including investments in research and innovation to develop resilient varieties, improve agronomic practices, and mitigate post-harvest losses. Strengthening market institutions, enhancing market transparency, and promoting inclusive value chain governance mechanisms can foster more equitable market participation and distribution of benefits among stakeholders (Nega et al., 2015). Interventions such as establishing farmer cooperatives, improving access to market information through digital platforms, and investing in infrastructure development can play a significant role in empowering farmers (Millar & Yeboah, 2006).

4.7 Collaborative Efforts and Policy Support

Effective collaboration and partnerships among governments, private sector actors, civil society organizations, and development agencies are critical to mobilize resources, leverage expertise, and implement coordinated interventions that address the root causes of constraints in groundnut marketing (Ravinder Reddy et al., 2012). Furthermore, supportive policy and regulatory frameworks are essential to create an enabling environment for groundnut marketing, characterized by transparent pricing mechanisms, improved market infrastructure, and targeted support for smallholder farmers and

marginalized groups (Diop et al., 2004; Shiferaw et al., 2009).

Additionally, policy measures aimed at stabilizing prices and providing financial support for storage and processing facilities can help mitigate risks and enhance the overall sustainability of groundnut cultivation in the region (Reddy & Bantilan, 2011).

4.8 Enhancing Agricultural Outcomes: A Research Framework



Fig. 2. Overcoming Challenges to Enhance Agricultural Outcomes
(Source: Authors)

Fig 2 depicts a framework that offers a foundational structure for examining how different interventions may contribute to positive agricultural outcomes. Through a thorough examination of these strategies' effects on efficiency, profitability, sustainability, and farmer livelihoods, researchers can actively contribute to the formulation of effective solutions aimed at fostering a more productive and resilient agricultural sector.

5. CONCLUSION

Groundnut marketing is a complex and multifaceted process that involves various stakeholders and activities. While it presents numerous opportunities for smallholder farmers, it is also fraught with challenges that need to be addressed to enhance market efficiency and farmer incomes. By identifying and addressing the constraints associated with groundnut marketing, stakeholders can develop targeted interventions to improve the overall performance of the groundnut value chain. Strategies such as improving market access, implementing price stabilization mechanisms, enhancing infrastructure and storage, promoting quality standards and certification, strengthening institutional support, and leveraging digital solutions can significantly enhance the efficiency and effectiveness of groundnut marketing. These strategies can help smallholder farmers overcome the challenges they face, maximize their returns, and contribute to the sustainable development of the groundnut sector.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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