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Mang'ana, Kulwa

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OPINION ARTICLE

Unlocking the potential of Tanzania's cashew processing industry: A comparative analysis with Côte d'Ivoire and Mozambique [version 1; peer review: awaiting peer review]

Kulwa Mang'ana ¹, Revelian Ngaiza², Michael Paul³

¹School of Business studies and Humanities (BuSH), Nelson Mandela African Institute of Science and Technology (NM-AIST), Arusha, Tanzania

²Acting Director of Marketing and Quality Control, Cashewnut Board of Tanzania, Mtwara, Tanzania

³Kamprad Consulting, Chuo Kikuu, Morogoro, Tanzania

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Abstract

Cashew processing is a vital contributor to economic growth in Tanzania, renowned for its cashew nut production. However, despite the country's historical prominence in cashew production, only 5% of raw cashews undergo local processing, resulting in substantial economic losses. This paper explores the challenges and opportunities within Tanzania's cashew processing industry, focusing on limited local processing capacity, inefficient tools, raw material availability, market access, and government support. Comparative insights from Côte d'Ivoire and Mozambique further enrich our understanding of the cashew sector. It recommends increasing local processing capacity, enhancing technical expertise through training, ensuring a reliable supply of high-quality raw materials, improving market access via information systems, and strengthening government support with tailored policy frameworks. Notably, the paper emphasizes regional collaboration among African cashew-producing nations as a crucial strategy for collective growth and knowledge exchange. By drawing upon their experiences, this study aims to provide guidance for policymakers, industry stakeholders, and investors to revitalize and sustain Tanzania's cashew processing sector.

Keywords

Cashew Processing, Challenges, Comparative Analysis and Sustainable Growth

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Any reports and responses or comments on the article can be found at the end of the article.



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Corresponding author: Kulwa Mang'ana (kulwa.mangana@nm-aist.ac.tz)

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Challenges in Tanzania's cashew processing industry

Limited local processing capacity

The foremost challenge plaguing Tanzania's cashew processing sector is the inherent limitation in local processing capacity (Chimbyangu, 2020; Mgonja & Shausi, 2022; Nkwabi, 2019). Historically, the nation has enjoyed a reputation as a prominent cashew nut producer, often referred to as the "grey gold" due to its high investment returns. However, this potential remains significantly untapped, primarily due to the underdeveloped local processing infrastructure. In consequence, a substantial proportion of raw cashew nuts are exported for processing, resulting in pronounced economic losses. To truly unlock the sector's potential and reverse these losses, substantial investments in local processing infrastructure are imperative. Such investments should encompass the establishment of modern processing facilities, the adoption of efficient technologies, and the fostering of local processing expertise. This approach not only ensures value addition within the country but also reduces post-harvest losses and enhances overall economic gains.

Inefficient tools and equipment

Another critical challenge that hampers the growth of Tanzania's cashew processing industry is the prevalent use of inefficient local processing tools and equipment, predominantly employed by small-scale cashew nut processors. These antiquated and often outdated tools contribute to the suboptimal quality of processed products, diminishing the industry's global competitiveness. A stark example is the reliance on hand-operated processing machines with limited processing capacities, which invariably yield subpar results (Lukurugu *et al.*, 2022; Mgonja & Shausi, 2022). To surmount this challenge, an immediate shift toward modern and efficient processing equipment is necessary. Investments in state-of-the-art machinery, designed to enhance both the quantity and quality of processed cashew nuts, would be a pivotal step forward. Moreover, initiatives that promote technological adoption and skill development among processors are essential for driving innovation within the sector and elevating its global standing.

Raw material availability and consistency

Ensuring consistent access to raw cashew nuts emerges as a significant hurdle within the Tanzanian cashew processing landscape. The interplay of factors such as insufficient investment and working capital, coupled with the erratic availability of raw materials, impedes processors' ability to operate efficiently and meet market demands. Achieving a reliable and consistent supply of raw cashew nuts is paramount to sustaining the sector's operations and promoting growth. To address this challenge, strategic investments in cashew nut cultivation and harvesting practices are necessary. These investments should prioritize the enhancement of both quality and quantity in raw cashew nut production (Chimbyangu, 2020). Additionally, mechanisms that promote financial stability among smallholder farmers and processors, such as access to credit and working capital, are pivotal in ensuring a stable supply chain.

Market access and information

Small-scale processors in Tanzania frequently grapple with the challenge of accessing markets, stemming from a dearth of market information and a limited understanding of market dynamics. Lukurugu *et al.* (2022) reported that the major limiting factor in the use of improved cashew technologies was the inadequate information. This predicament significantly curtails their ability to effectively compete on the global stage and capitalize on value addition opportunities. The absence of market insights and inadequate understanding of customer preferences can lead to missed opportunities and suboptimal pricing strategies. Addressing this challenge necessitates a multifaceted approach. Initiatives aimed at providing small-scale processors with access to market information, coupled with training programs in marketing strategies and customer engagement, are essential. These endeavors can equip processors with the knowledge and skills required to navigate dynamic global markets and enhance their competitive edge.

Government policy and support

In the realm of government policy and support, Tanzania's cashew processing sector faces challenges that are instrumental in shaping its trajectory. The sector needs sufficient government support, encompassing issues related to accessible information on relevant regulations, training facilities, and initiatives aimed at assisting processors. Limited support translates into missed opportunities for growth and sustainability (Mihyo, 2019). Rectifying these gaps is pivotal for the sector's progress. Clear and accessible policies should be instituted to guide and empower processors. Government-led initiatives aimed at providing essential training, facilitating access to capital, and disseminating information on regulations can bolster the sector's development. Moreover, fostering collaboration between government agencies, industry stakeholders, and small-scale processors can engender a supportive ecosystem that catalyzes growth and innovation.

To address the policy framework and government support challenges in Tanzania's cashew processing industry, it is essential to delve into recent initiatives. Tanzania has undertaken measures such as the Warehouse Receipt System (WRS), signifying a trade arrangement by which produce is kept in accredited storerooms, and commodity possessors are provided with receipts indicating ownership, value, category, quantity, and quality of their produce (Tanzania Warehouse Licensing Board (TWLB), 2013). The WRS is a trade arrangement designed to streamline the storage and transaction processes, providing a structured mechanism for managing produce. According to the Tanzania Warehouse Licensing Board (TWLB) in 2013, the WRS involves the storage of cashew produce in accredited storerooms. Commodity possessors, typically farmers or processors, are issued detailed receipts that include essential information such as ownership, value, category, quantity, and quality of the stored produce. This documentation serves as a legally recognized proof of possession and is instrumental in facilitating secure transactions throughout the cashew value chain. Literature supports the notion that transparent and efficient warehouse systems contribute significantly to agricultural supply chain management. In their study on agricultural value chain development, Lukurugu *et al.* (2022) emphasized the importance of robust storage and handling systems in enhancing the competitiveness of cashew and other agricultural products. The WRS aligns with this perspective by providing a standardized and regulated platform for storage, reducing the risk of spoilage, and ensuring the quality of the cashew produce.

Muchmore, the literature highlights the role of such systems in improving market access for small-scale producers. In a similar agricultural context, Lukurugu *et al.* (2022) noted that reliable storage facilities and associated documentation positively influence market participation among small-scale farmers. The WRS in Tanzania acts as a catalyst for market access by establishing a credible record of the cashew produce's attributes, fostering trust between producers and buyers. The adoption of the WRS reflects a commitment to good governance and accountability within Tanzania's cashew industry. Mihyo (2019) emphasized the importance of effective agricultural policies and governance structures for poverty reduction in Tanzania. The WRS, by ensuring accurate record-keeping and transparent transactions, aligns with these principles and contributes to the sector's overall stability and sustainability.

Furthermore, the government is prioritizing the trading of kernels over Raw Cashew Nuts (RCN). This shift allows local processing companies to access loans from the Tanzania Agricultural Development Bank (TADB) to establish state-of-the-art equipment for large-scale production. Moreover, as part of their commitment to bolster the cashew industry, the government has embarked on an initiative to distribute 91,764 kilograms of cashew seedlings valued at TZS 275.9 million through local government councils. This proactive measure is geared towards achieving the ambitious target of producing 700,000 tonnes of cashew nuts by the 2025/26 season (Nelly, 2022). These multifaceted efforts underscore the government's unwavering dedication to facilitating growth and sustainability within the Tanzanian cashew processing sector.

Comparative Insights from Côte d'Ivoire and Mozambique

To gain deeper insights into the challenges and opportunities faced by Tanzania's cashew processing industry, we turn our attention to Côte d'Ivoire and Mozambique. These two countries, much like Tanzania, hold significant roles in the global cashew arena, each grappling with its unique set of challenges and experiences in cashew processing. Exploring the commonalities and disparities among them can provide valuable lessons and best practices, shedding light on pathways to sustainable growth and development.

Côte d'Ivoire's cashew processing industry

Côte d'Ivoire, located in West Africa, has long been a key player in the global cashew landscape. However, its cashew processing sector confronts a series of challenges that mirror Tanzania's circumstances in various ways (Zandamela, 2021). Key issues include the following.

Machinery deficiencies

In Côte d'Ivoire, the cashew processing industry grapples with machinery deficiencies, posing significant impediments to efficiency and productivity. The need to import processing equipment introduces logistical complexities, adding layers of intricacy to the entire processing journey. This challenge is echoed in the literature, where Tessmann (2020) highlights the dependence on imported machinery in the cashew industry. Importation not only raises costs but also introduces delays and potential disruptions in the supply chain, emphasizing the importance of locally sourced or manufactured machinery for a sustainable and streamlined processing sector.

Infrastructure and warehousing limitations

Limited infrastructure and warehousing facilities compound the challenges faced by the cashew processing industry in Côte d'Ivoire. Effective storage and logistics are pivotal for efficient processing and the preservation of product quality. [Coast and Doktorgrades \(2020\)](#) and [Tessmann \(2020\)](#) discuss the importance of adequate infrastructure in cashew value chain, emphasizing that storage facilities are critical for maintaining the quality of raw cashew nuts. The literature suggests that investments in infrastructure, including warehouses equipped with modern technologies, are essential for overcoming such limitations and ensuring the smooth functioning of the cashew processing sector.

Technical expertise and training shortages

Côte d'Ivoire's cashew processing sector encounters persistent challenges related to technical expertise and training shortages. Maintaining product quality and optimizing efficiency heavily rely on the skills and knowledge of personnel involved in processing practices. [Lukurugu et al. \(2022\)](#) emphasize the significance of skills development in the adoption of enhanced cashew production technologies among smallholder farmers in Tanzania. The shortage of training opportunities within the cashew processing sector in Côte d'Ivoire underscores the need for targeted initiatives to enhance technical expertise, fostering innovation and efficiency in line with global standards.

Access to financial services

Access to financial services, including credit and investment options, plays a crucial role in the growth of Côte d'Ivoire's cashew processing sector. Challenges in this domain have implications for the industry's overall capacity and competitiveness. [Zandamela \(2021\)](#) notes similar challenges in Mozambique's cashew industry, where limited access to financial services hampers the sector's ability to invest in modern technologies and infrastructure. The literature suggests that addressing these challenges requires collaborative efforts involving financial institutions, government interventions, and private sector initiatives to create a conducive financial environment for sustainable growth in the cashew processing industry.

However, what distinguishes Côte d'Ivoire is its exceptional success story within the cashew industry. Côte d'Ivoire's evolution into one of the foremost global cashew nut producers is attributed to a combination of government incentives and collaborative efforts with its partners, all transpiring within a backdrop of favorable market conditions. Government initiatives have played a pivotal role, offering subsidies and waiving taxes and duties on the export of locally processed cashew nuts. A noteworthy instance is the introduction, in 2016, of a subsidy amounting to EUR 0.6 per kg for locally processed and exported cashew nuts, extending over a five-year period. The industry's resilience is further fortified by strategic investments in research and development, particularly focusing on cultivating high-yield seeds. The active involvement of non-governmental organizations has been crucial, providing essential technical assistance to small-scale producers and contributing significantly to the industry's strength. To emphasize domestic processing, Côte d'Ivoire has implemented rigorous measures to regulate participants in the value chain. Raw cashew nuts are exclusively sold to duly licensed cooperatives, intermediaries, and processors. Specific licensing requirements for different entities within the value chain, restrictions on purchases before the marketing year commences, and the prohibition of exports through land borders constitute integral measures aimed at ensuring the efficiency and integrity of Côte d'Ivoire's cashew industry ([Zandamela, 2021](#)).

As Côte d'Ivoire's experiences intertwine with Tanzania's, they stand as a testament to the transformative power of government incentives and strategic measures in fostering sector growth and development. These shared experiences underscore the importance of proactive governmental initiatives in steering the cashew processing industry toward prosperity.

Mozambique's Cashew processing industry

Moving to southeastern Africa, Mozambique presents its own distinct array of challenges and opportunities within the cashew processing sphere.

Low-quality raw cashew nuts

Mozambique faces a significant challenge in dealing with low-quality raw cashew nuts, posing a considerable threat to overall product quality and market competitiveness. [Martin \(2016\)](#) underscores the impact of such challenges on the industry, emphasizing the need for targeted interventions to improve the quality of raw cashews. In the broader context,

the literature suggests that enhancing the quality of raw materials is essential for the success of the cashew processing industry. Initiatives focusing on improved agricultural practices, including proper harvesting and handling techniques, can contribute to mitigating this challenge and ensuring a consistent supply of high-quality raw cashews.

High procurement costs

Fragmentation in the cashew procurement process in Mozambique results in elevated costs, adversely affecting the industry's overall profitability. The literature echoes the significance of streamlining procurement processes to enhance efficiency and reduce costs. [Costa and Delgado \(2019\)](#) discuss challenges in Mozambique's cashew value chain, emphasizing the need for coordinated efforts in addressing procurement-related issues. Lessons from other agricultural value chains, as highlighted by [Kit et al. \(2019\)](#), suggest that establishing efficient procurement systems and fostering collaboration among stakeholders can contribute to cost reduction and increased profitability in the cashew processing sector.

Sustainability issues

Mozambique's cashew processing industry grapples with sustainability issues, particularly in the realm of slow replanting programs and limited access to technical assistance. Challenges in primary production, including the replacement of aging trees with improved root stock and the need for increased anti-fungal spraying, present substantial hurdles to achieving sustainable growth. [Costa and Delgado \(2019\)](#) emphasize the importance of addressing sustainability challenges in Mozambique's cashew value chain. The literature underscores the need for strategic interventions, such as promoting sustainable agricultural practices, investing in research and development, and providing adequate technical support, to ensure the long-term viability and resilience of the cashew processing sector in Mozambique.

However, Mozambique's proactive stance toward innovation introduces intriguing prospects. The nation's focus on harnessing innovative technology for energy generation and its resolute commitment to carbon sequestration underscore Mozambique's determination to surmount these challenges. In the realm of cashew processing, Mozambique emerges as a distinctive actor, weaving a narrative uniquely its own—comprising challenges and opportunities that offer alternative perspectives for success. While shared challenges resonate with Tanzania's experience, Mozambique introduces novel dynamics that illuminate diverse pathways to prosperity. Notably, Mozambique adeptly responds to the surging demand for cashew kernels driven by evolving consumer preferences for healthy snacks and ingredients, thus diversifying its product range. Strategically marketing raw cashew nuts at different times of the year allows Mozambique to capitalize on market gaps and fluctuations, a strategic advantage not fully harnessed by Tanzania. Leveraging preferential trade agreements and exploiting its coastal location with efficient port access further cements Mozambique's competitive edge.

Forging a path forward: Practical strategies for sustainable cashew processing

The insights derived from the comparative analysis of Côte d'Ivoire, Mozambique, and Tanzania offer a roadmap for the sustainable growth of cashew processing industries in these nations. This section delineates practical strategies, hinging on commonalities and tailored to address disparities, which can guide policymakers, industry stakeholders, and investors toward transformative outcomes.

A paramount challenge shared by these countries is the limitation in local processing capacity, leading to substantial economic losses from exporting raw cashews. To bolster domestic processing and maximize value retention, governments and private sector entities should channel investments into local infrastructure development. This entails the establishment of modern processing facilities, upgrading machinery, and expanding storage capacities. These investments will stimulate local processing rates and enhance economic returns.

Another commonality among these nations is the dearth of technical expertise within their cashew processing sectors, influencing product quality and competitiveness. To rectify this shortfall, comprehensive skills training programs must be initiated, encompassing all aspects of cashew processing, from harvesting techniques to stringent quality control. Public-private partnerships can prove instrumental in designing and executing these programs, ensuring processors acquire the requisite knowledge and skills for improved product quality and enhanced operational efficiency.

Consistent access to high-quality raw cashew nuts remains a shared challenge among Tanzania, Côte d'Ivoire, and Mozambique. Securing a dependable supply of raw materials is paramount for the sustained operation of processing facilities. To achieve this, governments should proactively promote cashew farming through a multifaceted approach. This includes providing incentives for farmers, facilitating access to improved planting materials, extending financial support, and implementing replanting programs. By stabilizing the supply of top-grade raw cashews, the processing industry's viability can be ensured.

Market access continues to be a thorny issue for small-scale processors across these nations due to a lack of market information and limited understanding of market dynamics. To mitigate this challenge, establishing accessible market information systems is imperative. These systems should offer real-time data on cashew prices, demand trends, and market opportunities. Empowering processors with timely and relevant information will enable them to make informed decisions and tap into profitable markets, both locally and internationally.

Insufficient government support, including accessible regulatory information and initiatives for processor assistance, plagues the cashew processing sectors of all three countries. Crafting supportive policy frameworks is critical to overcoming this hurdle. Governments should enact regulations and incentives that cater to the unique needs of the cashew processing sector. Transparency and accessibility should be paramount when providing regulatory information, reducing compliance barriers, and fostering a favorable business environment.

Promoting regional collaboration emerges as a cross-cutting strategy with significant potential. Cashew-producing countries in Africa can collectively thrive through knowledge sharing and coordinated industry development efforts. Consider establishing a Regional Cashew Council, uniting African cashew-producing nations. This platform can serve as a conduit for knowledge exchange, best practice dissemination, and coordinated initiatives spanning the entire cashew value chain, from farming practices to advanced processing techniques.

Conclusion

Tanzania's cashew processing industry stands at a crossroads, offering immense potential for growth and development. Addressing the challenges of limited local processing, inefficient tools, raw material availability, market access, and government support is imperative. Drawing upon comparative insights from Côte d'Ivoire and Mozambique, we find that shared experiences and best practices offer valuable lessons for Tanzania's journey towards revitalizing and sustaining its cashew processing sector. Conclusively, the practical strategies outlined here, grounded in the comparative analysis, hold the promise of reshaping the cashew processing landscape. By adopting these strategies and fostering regional collaboration, these nations, along with their African counterparts, can unlock the full potential of their cashew sectors. The journey toward sustainable economic development, job creation, and enduring growth in the global cashew industry beckons, and these strategies pave the way for transformative progress.

Data availability

No data are associated with this article.

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