

Advancing Entrepreneurship and Commerce in the Nadapal Cross-border Livestock Trade Corridor of Turkana, Kenya, and Kapoeta, South Sudan: Optimising Market Efficacy for Pastoral Economies

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Corresponding Author Ekiru Francis Anno Unicaf University (UUM), School of Doctoral Studies, Lilongwe, Malawi	<p>Abstract: In the border regions of Turkana, Kenya, and Kapoeta, South Sudan, interethnic pastoralist communities utilize the diverse rangeland and montane ecosystems, Ilemi Triangle included for livestock production activities. Livestock traders have emerged, engaging in the buying and selling of animals, particularly in cross-border trade, which faces policy and regulatory challenges from national and local governments. A study on entrepreneurship and commerce at Nadapal cross-border livestock trade corridor aimed to assess the entrepreneurial capacities of local traders, map trading activities in Lokichoggio and Narus areas, and identify the challenges and opportunities in this trade. The research included 132 primary respondents (livestock traders) and 26 secondary respondents (from government and civil organizations) utilizing a survey methodology. The study reveals that livestock domestication is hampering entrepreneurship and trade growth among the cross-border communities in the Horn of Africa. The pastoralists focus on livestock domestication restricts market-driven output, thereby undermining livestock trading as a viable business. Local traders lack the necessary business skills and knowledge to expand and compete successfully in different market segments. The primary trading unions i.e., livestock marketing associations (LMAs), need better structure and organization by integrating trained individuals and promoting gender inclusivity. Additionally, traders require training in market functionality, regulations, and cross-border relations to improve trade efficiency. The study highlights the necessity for behavioral adaptations in livestock farming and trading to mitigate risks such as disputes and theft that characterize the study area, alongside the development of innovative systems. Inadequate banking services further deter bulk transactions, impacting the safety and profitability of livestock trade.</p> <p>Keywords: <i>Pastoralism, Entrepreneurship, Livestock trade, Market access, Value creation, Border regulations, Regional integration.</i></p>
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Introduction

Pastoral livestock farming is the primary method of livestock producing in many dryland regions of the Horn of Africa. It is only on need basis that herders tend to take one or a few animals to the market just to meet that pointing in time financial needs. Pastoral production system which is largely subsistence supports food security and environmental sustainability, particularly for rural families with limited market access. However, the system faces challenges such as low productivity, inadequate agricultural inputs, poor market access, vulnerability to climate change, and land degradation. Additional issues include mobility, recurrent droughts, resource based conflicts, unreliable labor, limited knowledge and skills, and low literacy levels of many pastoralist farmers.

Entrepreneurship involves creating and managing new business ventures to generate value and profits, if finance and risk management practices are well incorporated. Entrepreneurship utilizes innovative ideas to capitalize on market opportunities, fostering rural economic growth, job creation, and societal value. Key to this transformation is the engagement of herders and stakeholders in efficient livestock programming and value chains development. Emotional intelligence, resilience, time management, financial literacy, and role delegation among market actors are

essential for maximizing gains in entrepreneurial livestock production.

Strategic marketing planning is crucial for successful livestock entrepreneurship in pastoral areas, promoting competitive and efficient enterprises. It emphasizes adapting to market structures, leveraging resources, and targeting less saturated markets. Effective marketing plans facilitate resource mobilization and strategic responses to market fluctuations, aligning with business goals. A clear integration of marketing in livestock ventures, focusing on customization, market capitalization, and competition management, is essential for enhancing competitiveness in local and cross-border contexts.

In the East African Community and the Horn of Africa, cross-border livestock commerce is considered a fundamental component of regional integration and a means to bolster the economy of livestock-rearing communities engaged in pastoralism and agro-pastoralism, enabling them to capitalize on trading opportunities. Establishing market opportunities in key urban and rural areas and across the borders will advantage livestock farmers and address numerous challenges, including food and income insecurity, while promoting peace, security, and relationships essential for sustaining livestock production and commerce.

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Literature Review

Livestock sector in Kenya and its Role in Development

A total of 50% of Kenya's agricultural workforce is employed in the livestock industry, contributing 20% to the national economic output. The drylands produce 70% of the nation's livestock, aiding over 10 million pastoralists in 18 of the 20 poorest counties. According to Kenya National Bureau of Statistics (2018) and Kosgey et al. (2008), projections were made that indicate growth in the livestock sector over the next three decades, contributing to a developed rural economy. However, recurring droughts pose significant challenges, leading to considerable losses in livestock resources and livelihoods.

Roba et al. (2019) highlight that enhancing community empowerment and gender integration improves understanding of agricultural investments and market systems and according to Asfaw et al. (2018), Fan et al. (2015), and Thornton (2010), pastoralism is significantly important for rural growth where pastoral communities depend on environmental resources for season-long livestock production and seasonal resilience. These capabilities, supported by community-managed plans, are crucial for the livestock sector's sustainability, pastoral livelihoods, and market access (FAO et al., 2017; Anno et al., 2024).

Performance of cross-border livestock commerce

It is anticipated that the transfer of livestock-based goods and services between local and regional markets in Eastern Africa will be made easier by the presence of cross-border trade making it a durable achievement for the region (Asfaw et al., 2018; Jubara et al., 2021). However, the majority of the cross-border commerce in these countries remains largely informal. On the other hand, the majority of stakeholders have a limited understanding of the critical market forces and the concept of livestock commerce that occurs across international borders (Watson and van Binsbergen, 2008). According to Anno and Pjero (2021), The cross-border livestock trade in the Eastern Africa region is highly controlled, bureaucratic, burdensome, and expensive due to significant taxation and severe border protocols.

The cross-border livestock trade in Turkana (Kenya), Karamoja (Uganda), Eastern Equatorial State (South Sudan), and South Omo (Ethiopia) is estimated to be worth more than US \$61 million annually, with only 10% (approximately) of it passing through official trade channels (Roba et al., 2019). Despite the fact that a significant portion of this trade is undocumented, it is estimated that it is worth more than US \$61 million annually. Uganda comes out on top when compared to East African countries.

Livestock production and marketing in rural areas

The improvement of access to markets results in a rise in the availability of food, nutrition, and revenue in regions that are primarily dependent on livestock production. The organisation of livestock production and trading activities in such areas is supported by a number of factors, including the harmonized strategies for dryland development (Moritz, 2008). It is also found in Nin et al. (2007) that the formulation and implementation of pro-livestock development policies and interventions lead to an increase in the access to the potential markets. However, Quisumbing et al. (2015) argue that expansion of livestock development projects is hampered by the presence of hitches that

are common in pastoral region settings, which include persistent drought and resource-based conflicts. Despite such challenges, drylands remain key areas for livestock production, aggregation and market access (Kenya National Bureau of Statistics, 2018; Quisumbing et al., 2015).

Findings from Gjeci et al. (2018) and Grace et al. (2015) elucidate that the development of resilient urban food systems, which can be achieved through organised rural and urban livestock keeping and trade, strengthens pathways for winning acceptance of livestock products in highly regulated markets. Also, Costa et al. (2020) and Grace et al. (2015) assert that the bargaining power of entrepreneurs in the livestock industry and the standardization of approaches to managing livestock development will leverage the value of livestock for successful internal and cross-border trade activities.

Livestock market-access guidelines and standards

Health and safety regulations are crucial in livestock production and marketing. These guidelines are more stringently applied when it comes to cross-border livestock and products trading (Thumbi et al., 2015). The One Health approach enhances policy relevance by integrating human, livestock, and environmental health to ensure safety is emphasized by livestock farming communities and traders. According to Gjeci et al. (2016) and Bombaj et al. (2017), to be effective in cross-border livestock trade, farmers and traders should be aware of regulatory health standards for compliance during livestock production, management, trading of live animals and safety of livestock products destined for various markets. Lack of adherence to health standards has resulted in the inaccessibility of cross-border markets, despite traders' and goods' relatively competitive advantages.

A significant body of knowledge and best practices in livestock farming has emerged globally through various livestock development projects and research studies focused on policy support, inclusivity, resilience, human nutrition, and environmental sanitation (FAO et al., 2017; Yaméogo et al., 2014). It is also presented in Anno and Pjero (2021) and Roba et al. (2019) that the livestock markets in the Horn of Africa face challenges such as unstable marketplaces, high transportation costs, lack of processing enterprises, and inferior product quality compared to imports. Solutions to these challenges are also contributed in Kosgey et al. (2008) where government and development partners are supposed to foster herders and traders' empowerment, build strong partnerships and linkages between production areas and markets and strengthen strategies to build sustainable peace through reduction of resource based conflict and market access challenges thus creating more opportunities to venture into cross-border livestock trade engagements.

Methodology

The research employed a survey methodology to gather data from participants (traders) in the Nadapal livestock trading corridor, which includes Lokichoggio in Turkana, Kenya, and the adjacent border regions of Kapoeta in South Sudan. The study sample for primary participants (cross-border livestock traders) was statistically determined using a 95% confidence level, a 5% margin of error, a population proportion of 50%, and a population size of N=200, representing the estimated active livestock traders in the study area. The overall sample of primary participants was

N=132, evenly divided between the two countries, Kenya and South Sudan, with 50% allocated to each. Of the primary study participants, N=108 (82%) were male and N=57 (43%) were young individuals (aged under 35 years). The secondary research participants comprised members of the border management committee (BMC), including security, immigration, and trade representatives from both sides of the border (N=12), local government administrators (N=8), and heads of civil society organizations working in the study area (N=6).

A semi-structured questionnaire was utilised to collect data from study participants regarding essential elements of the study area, namely entrepreneurship, cross-border trading activities, and

the obstacles and opportunities within the Nadapal livestock trading corridor. The data was primarily analysed using qualitative methods, involving data preparation and organisation, data review and exploration, code construction, thematic review, and the presentation of themes in a coherent manner. The gathered data was validated against the existing literature on the study issues and through stakeholder data assessment workshops. The map below delineates the research area along the Kenyan border with South Sudan, specifically the Lokichoggio region and Kapoeta South, encompassing the Narus and Nadapal districts, and Ileme Tringle (disputed) area.

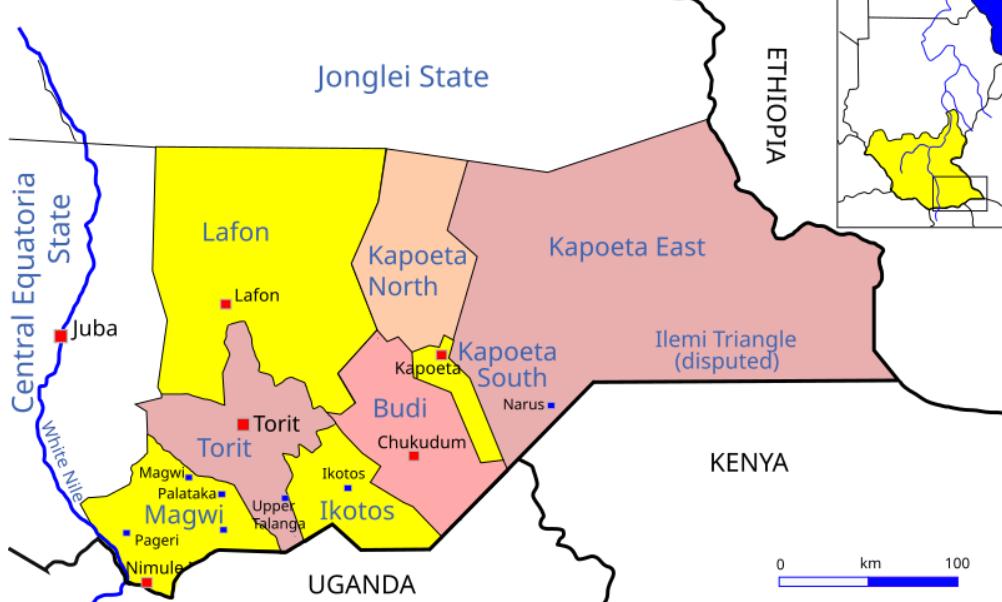


Figure 1: Map of the study area – Cross-border areas of Turkana, Kenya and Kapoeta, South Sudan

Results and Discussion

Entrepreneurship capability of core market actors

Visioning and entrepreneurial mindset

The research determined that the local traders' vision for the livestock trade is eclipsed by animal domestication. Livestock traders continue to engage in the domestication of livestock. Although several market-weight animals exist within their herds and communities, they are not sold due to livestock domestication and cultural practices, including marriages, social events, and the pursuit of prestige, which deplete a significant portion of these animals. The heavy emphasis on community values restricts the potential for developing a more robust livestock business concept among pastoral communities in the Nadapal livestock trade corridor of Kenya and South Sudan.

The entrepreneurial attitude is assessed as deficient among livestock traders. This results from insufficient abilities to discover and explore market opportunities across the borders of both countries, handle cross-border hitches and dynamics, and compete effectively in secondary and tertiary markets within the area. The absence of an entrepreneurial spirit is ascribed to inadequate visioning of livestock commerce, despite livestock traders from both the Turkana and Toposa regions being among the foremost livestock keepers in the Horn of Africa.

Trading organization and leadership

In Kenya, livestock marketing associations have been established and are functioning to oversee both primary and secondary livestock markets. These trading organisations are designated committees that report market activities to the County Livestock Marketing Council (CLMC). In South Sudan, analogous community-led associations have been established and are functioning. In the Eastern Equatoria region, numerous civil society organisations, in collaboration with local government departments for livestock and trade, are assisting local livestock traders in conducting trade both locally and beyond borders. An exemplary organisation of this nature is The Greater Kapoeta Cooperative Development Agency and Narus Livestock Marketing Association, which collaborate with local communities and farmers to enhance livestock production and sale.

Despite the existence of farmer and community-based organisations, the structures of livestock trading organisations remain outdated. The majority of members, including officials, are illiterate, which predisposes them to issues in formal communication, technology utilisation, and the capacity to negotiate cross-border trade agreements. The inadequate specialized training in livestock husbandry, sociology, and relationship management is impairing the effectiveness of trader association leadership. Another leadership difficulty is the absence of elections to appoint new leaders. This has resulted in livestock marketing organisations being overseen by outdated officials, some

of whom do not contribute value to the organisations or their leadership processes.

Knowledge and skillsets for livestock trade and relations

Numerous organisations and governments have educated traders in Kenya and South Sudan on various facets of livestock production and markets, particularly regarding livestock markets as hotspots for diseases, the rearing of healthy and productive livestock for market, and the management of trade activities, specifically concerning supply and demand as well as non-market forces, among other aspects. Nonetheless, the complexity of these training domains and the inability of most traders to read and write hinder the acquisition of knowledge and skills associated with such training themes.

The inability to read and evaluate literature on best practices in livestock production and marketing further impedes knowledge acquisition and skill development. The inequalities are exacerbated by a preference for local and traditional livestock farming and trading techniques, resulting in a sluggish adoption of information and best practices. Consequently, top livestock traders from other regions often outmaneuver local traders, dominating their markets and relegating others to mere suppliers.

Market research practices and frequency

The study revealed a lack of strategic market competitive analysis in Turkana regarding livestock marketing activities in production areas where itinerant livestock traders operate, as well as in primary and secondary markets managed by livestock marketing associations and supervised by the county livestock marketing council. No competitive market study has been conducted at the tertiary market level, which encompasses the consumer, terminal, and export markets. The market segments for livestock trade remain undefined. This minimises the targeting of various clients with the potential products the cross-border livestock business can offer.

The absence of a clearly defined consumer base constrains the marketing potential, competitiveness, and profitability of Turkana's livestock sector. The majority of livestock commerce involves live animals exchanged among several livestock market groups. The market for meat products has not been investigated outside Turkana because of the scarcity of product branding research studies that may elucidate market demand and the potential size of supply for various meat items. The market exhibits limited awareness of factors influencing price sensitivity, including market conditions, product differentiation and uniqueness, competitive size, financial resources, expenses associated with livestock marketing, and the volatility of preference prices alongside demand elasticity. The revival of the Lomidat abattoir in Lokichoggio, Turkana can be realized through impactful market research and market access programmes.

The absence of market research elements contributes to elevated pricing, particularly in the Turkana secondary livestock market in Kakuma and the Narus livestock market in Eastern Equatoria state of South Sudan, resulting in diminished livestock volumes in these markets, especially during dry seasons. The lack of competitiveness in livestock prices within the Nadapal trade corridor has resulted in local markets ceding market share to prospective tertiary dealers from either Juba or Nairobi, who are dominating the export livestock trade. The unhappiness of livestock market participants and the failure of local traders to

capitalise on possibilities to maximise earnings undermine the potential of local markets and the profits that Turkana and Toposa traders may achieve.

Adaptability to cross border trade dynamics

The study identified an ambiguous organizational culture of livestock marketing associations that governs the structure and involvement of various livestock dealers and market participants in organizing market operations through collective values, behaviors, and norms. The cultural divide has rendered markets susceptible to conflicts and misunderstandings, often hindering cross-border trade transactions. Undetermined aspects of innovation include consumer requirements mapping, ideation, and new product creation. Leadership and management of disruptions are ambiguous aspects in cross-border trade.

Due to the border management protocol and security tensions, any disturbance to market operations prompts government officials to intervene, resulting in the rapid closure of the entire market and the suspension of cross-border transactions. The investigation revealed that the Kenyan government has formed a border management council of national security agencies, the immigration authority, and the revenue authority to oversee security, trade, and tax issues. This is being reproduced on the South Sudan side. This policy will revolutionize the management of border dynamics, with the government assuming responsibility for facilitating cross-border trade and relations.

Innovation and creativity management in livestock production and trade

Similar to other commercial ventures in contexts of risk and uncertainty, creativity is a crucial component to consider. The primary factors examined were the capacity of market participants in the Nadapal livestock trade corridor to engage in year-round livestock marketing, their ability to manage resource-based conflicts, and their navigation of uncertainties in international border regions. The study identified the seasonality of livestock trade in the area, attributing it to severe droughts, pastoral nomadic practices necessitating regular migrations to regions with sufficient pasture and water, and formal border regulations that impose restrictions on livestock movement and transportation due to trade controls, livestock disease management, and licensing requirements.

The research additionally revealed that traders in Nadapal border area lack freedom of movement in the livestock sector. This is due to the absence of requisite papers for participation in cross-border trade. Some lack the necessary identification documents and certifications from medical and public health authorities. Regarding the uniqueness of commerce, the majority of livestock exchanged by the Turkana and the Toposa originates from their respective catchment zones. This facilitates the identification of the animals' origin. Nevertheless, this does not restrict traders from sourcing stock supplies from alternative regions to fulfil demand in their intended markets. The continuous meetings between traders and government officials illustrate their capacity to assess trade performance and request remedies from authorities about cross-border trade regulations and the management of risks and uncertainties.

Livestock commerce activities

Trade liberalization encourages cross-border livestock commerce in the East African region to facilitate economic integration. This is achieved by reducing or eliminating trade taxes and barriers to incentivize increased commerce. The export of livestock remains constrained due to the necessity of sufficient resources for access to tertiary markets. None of the surveyed traders possess their own transportation or have the capability to independently hire trucks. Nevertheless, several traders have endeavoured to access tertiary markets by means of aggregation and the pooling of transportation and other associated expenses.

Livestock insurance has not yet been implemented in the region. A significant number of livestock farmers and traders lack comprehension of insurance and premiums. Nonetheless, insurance in livestock production and commerce is a paradigm shift that may require considerable time to actualize, given the dangers and uncertainties confronting livestock, traders, and financial resources. The competitiveness of the marketplaces is constrained. The primary factors are cultural and linguistic disparities. Despite the Turkana and Toposa communities sharing a local dialect, illiteracy persists at elevated levels, and proficiency in the official languages utilised in cross-border trade, namely English, Kiswahili, and Arabic, remains inadequate.

The inefficiency of official languages also disadvantages local traders in their transactions with traders from tertiary markets, resulting in diminished bargaining power. The Nadapal livestock trade corridor remains isolated regarding funding, lacking institutions to secure financial resources or offer credit services. Mobile banking services offered by telecommunications companies in Kenya, such as Safaricom and Airtel, as well as in South Sudan by MTN and Airtel, are inadequately disseminated along the border region. This has resulted in traders carrying cash becoming susceptible to theft and robbery during their transactions.

Challenges and opportunities in Nadapal trading corridor

The research examined border issues within the framework of the Nadapal Livestock Trading corridor. The border between Turkana, Kenya, and Nadapal, South Sudan, is a security hotspot, marked by frequent livestock raids and unrest. This situation will undoubtedly impede commercial activities along the border, thereby inducing reluctance and discouragement among participants in cross-border trading. Each border point is regulated by agreements established by the respective governments. The Nadapal border crossing ceases operations at 1800 hours, hence restricting trade activities and necessitating housing fees for traders who must cross the border the subsequent morning.

Kenyan traders are incurring significant losses due to the persistent devaluation of the South Sudanese Pound (SSP) against the US Dollar. In 2025, the SSP depreciated by 32.06% against the US dollar, while the US dollar appreciated by 47.19% against the SSP. The absence of a formal banking infrastructure in the border region presents significant obstacles for cash transactions, as the hefty SSP currency is cumbersome to transport. The issue of exchange rates creates pricing difficulties, as traders in South Sudan purchase livestock from farmers at elevated prices and suffer losses when applying exchange rates on the Kenyan side.

The primary method of livestock transport across the border and to markets in Turkana (Kenya) and Eastern Equatoria (South Sudan) is trekking. This situation is not only detrimental to

animals and traders but also ineffective in guaranteeing that animals reach the intended market promptly and at optimal weights. The language barrier persists as a hurdle; nevertheless, the rapid proliferation of Kiswahili in South Sudan may eventually mitigate communication difficulties. The governments of South Sudan and Kenya have accepted various accords concerning commerce, customs, and visas under the East African Community. Despite traders being liable for various taxes and charges at border points, cross-border trade continues to be a highly esteemed approach for regional stability, business, and peaceful coexistence.

The study identifies cross-border trade opportunities that facilitate access to new markets, providing significant prospects for traders from both Kenya and South Sudan to exchange goods and services as needed across various regional markets. For traders engaged in livestock trading inside their customary regions, cross-border trading serves as a method for revenue diversification and the attainment of economies of scale. The study revealed that cross-border commerce is fostering innovation and knowledge acquisition among traders in the East Africa region, enabling them to establish competitive advantages in various commodity markets. The regional peace protocol views trade as both a trigger for insecurity and a unifying element for farmers, traders, and authorities to participate in productive socioeconomic activity, as opposed to the historically entrenched practices of livestock domestication, cattle rustling, and subsistence farming.

Conclusion

The study concluded that livestock domestication impedes entrepreneurship, commerce and the growth of trading operations between the Turkana and Toposa groups, which are prominent livestock keepers in the Horn of Africa. The predominance of animals raised for community purposes restricts the potential to enhance livestock output for market purposes, hence undermining the viability of livestock trading as a primary justification for livestock farming. The entrepreneurial mindset among livestock farmers and traders is inadequate. Business capabilities have yet to be developed to empower local traders to excel in their own markets, investigate additional regional markets, and demonstrate their competitiveness across all market segments.

The primary trading unions of the Nadapal livestock trade corridor are livestock marketing associations (LMAs), which are established, registered by the government, and operated by the livestock traders themselves. Collaboration with Border Management Committees (BMC) and relevant governmental ministries, along with civil society organisations serving border communities, will enhance and maintain cross-border trade. Enhancing the structure and organisation of LMAs by incorporating technically trained individuals, youth, and women in leadership roles will address the deficiencies caused by illiteracy and insufficient technical knowledge and skills in livestock trading management, while also promoting gender inclusion, participation, and empowerment in cross-border livestock marketing activities.

It is evident that livestock producers and traders in the Nadapal livestock trading corridor lack sufficient training, particularly on market functionality, trade regulations, and the management of cross-border relations. These characteristics are essential for the execution of cross-border trade. Consequently, the study delineates essential competencies as focal points for intervention by pertinent stakeholders. Limitations in livestock

market research hinder the performance of local and cross-border markets, resulting in gaps in trade coordination, pricing, and information about opportunities in other markets, as well as trade hitches.

The study indicates that adaptation measures are necessary to alter the negative behaviours of those engaged in livestock farming and trading, in order to comprehend the dangers associated with livestock development in the region, particularly with resource-based disputes, cattle rustling, and the conduct of market participants. This is accomplished by constraining traditional practices in livestock farming, such as domestication, while promoting innovation, creativity, and the adoption of novel livestock farming and trading systems. Inadequate banking services in border regions would impede bulk livestock commerce, while the transportation of cash in markets and trade routes jeopardizes the safety of livestock producers and traders, fostering robbery and theft inside the trade corridor.

Recommendations

The study recommends the following as action areas for market actors and stakeholders to strengthen cross-border trade in the Nadapal corridor for livestock and other potential export markets within Kenya, South Sudan, and the East African region:

- Educating and informing livestock producers and traders about the principles of entrepreneurship and commerce, while instilling the concept of a market economy as a justification for livestock production in pastoral and agro-pastoral communities. This effort will cultivate business leaders who will align present livestock production practices with market processes.
- Organising the operations of Border Management Committees, particularly on the South Sudan side, will enhance the efficacy of essential government service delivery units, such as security, immigration, and revenue, to facilitate cross-border livestock activities and the associated trade-offs, thereby fostering a 24-hour economy while adhering to international regulations governing cross-border trade activities.
- The conversation between traders and governmental authorities should be prioritised in instances of misunderstandings and grievances. Given the instability of the Nadapal security situation and its relations, consultative forums for participation and planning will foster cohesion and a systematic approach to addressing issues related to cross-border trade and the market participants involved.
- Governments and livestock market participants must engage with the financial industry in both nations to devise financing and banking solutions for the Nadapal border regions. This effort would not only enhance accessibility to banking services for the populace but also mitigate the risks associated with traders transporting cash in markets and trade routes.

Areas for Future Research

This study delineates the subsequent key domains for prospective research:

- The establishment of cross-border livestock trade management rules by the Livestock Marketing Associations (LMAs). This study will delineate the

participation of LMAs and traders from Kenya and South Sudan in cross-border trade across various market categories in both nations.

- The influence of resource-based conflicts and livestock rustling on cross-border commerce between Kenya and South Sudan. This study will identify sources of conflict relevant to cross-border trade activities and propose strategies to restore dignity and efficiency in compliance with state security protocols.

Disclaimer

The views stated in this article are those of the author and do not necessarily represent those of any of the entities mentioned.

Interest Conflicts

The author declares no conflict of interest whatsoever in this publication.

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