

The socio-economic impact of COVID-19 on the well-being of pastoral communities and livestock keepers in East Africa

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Abstract

The commentary delves into the socio-economic repercussions of the COVID-19 pandemic on pastoral communities and livestock keepers in East Africa. The objective is to comprehensively examine the multifaceted impact on their well-being, considering socio-economic. Employing a literature review approach in google scholar, research4life, and PubMed databases, relevant studies and reports were synthesized to elucidate the unique challenges faced by these communities during the pandemic. Results indicate significant disruptions in the traditional livelihoods of pastoralists, manifesting in the form of disruptions in the livestock value chain, economic hardships, and elevated health risks. Limited access to disruption of food supply chain, supply of animal feed and drugs, pore provision of veterinary services exacerbates these challenges. The psychological well-being of pastoralists is also explored, revealing stressors tied to uncertainty and resource scarcity. In conclusion, the socio-economic impact of COVID-19 on pastoral communities in East Africa is substantial, necessitating tailored interventions to address their specific vulnerabilities. Recommendations encompass targeted socio-economic support, improved animal healthcare accessibility, and community engagement strategies. The findings contribute to a nuanced understanding of the pandemic's implications for pastoralist populations, guiding future research and policy initiatives geared towards enhancing their resilience in the face of global challenges.

Keywords: COVID-19 pandemic diseases, Food chain, Livestock production

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Introduction

The global repercussions of the emergence of the novel coronavirus SARS-CoV-2 in late 2019 have been profound, marking the onset of the COVID-19 pandemic (Atzrodt et al., 2020). The rapid dissemination of the virus worldwide resulted in a public health emergency of immense proportions. COVID-19 has profoundly impacted nearly every facet of human existence, giving rise to unparalleled disruptions on a global level (Gössling et al., 2020). The global pandemic has led to millions of infections and fatalities across the world. For instance, by the end of July 2023, the worldwide count of COVID-19 cases had exceeded 690 million (World Health Organization, 2023; Worldometer, 2023). Governments and healthcare systems find themselves inundated, grappling with a surge in cases and the surge in medical care demands. Measures like lockdowns, travel restrictions, and social distancing have been instituted to curb virus spread, precipitating notable economic downturns, job losses, and business closures. Industries like travel, tourism, and hospitality are especially hard-hit. While the repercussions of these impacts are expected to extend to pastoral communities and livestock keepers in East Africa, there is a paucity of systematic documentation on how COVID-19 specifically affects the livestock sector in this region (Yeh, 2021). Moreover, social realms, such as education, have witnessed disruptions characterized by school closures and a transition to online learning.

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Mental health issues have surfaced as a consequence of isolation, fear, and uncertainty. The virus has disproportionately affected vulnerable demographics, including the elderly, individuals with underlying health conditions, and marginalized communities. Livestock keepers, notably pastoralists, are not exempt from these aforementioned effects (Chaturvedi, 2020)

The advancement and widespread distribution of vaccines have fostered optimism in controlling the pandemic. Collaborative efforts on a global scale and advancements in science have significantly expedited vaccine development. However, challenges persist, including uneven distribution and the emergence of new variants, posing substantial obstacles. In the specific context of East Africa, where pastoralists and livestock keepers confront distinct challenges, addressing these issues involves acknowledging the significance of preparedness, reinforcing healthcare systems, and promoting global cooperation. The insights gained from the experiences of the COVID-19 pandemic will shape future strategies, underscoring the imperative for improved healthcare infrastructure, equitable access to healthcare, and more resilient pandemic response measures, especially in regions like East Africa characterized by pastoral and livestock-keeping communities (Bereitschaft & Scheller, 2020).

Importance of studying the socio-economic impacts on well-being of pastoral and livestock communities in East Africa

Studying the socio-economic impacts on the well-being of pastoral and livestock communities in East Africa is of paramount importance due to its multifaceted significance. These communities, often marginalized and

reliant on traditional practices, face unique challenges that necessitate in-depth examination. Understanding the socio-economic impacts is crucial for implementing targeted interventions that can alleviate vulnerabilities and enhance resilience. The livelihoods of pastoralists and livestock keepers are intricately tied to economic, health, and environmental factors, making a comprehensive study imperative for informed policymaking (Zhang, 2020). Insights gained from such studies contribute to the development of sustainable strategies that can mitigate adverse effects, improve overall well-being, and foster inclusive economic development in East Africa. Additionally, addressing socio-economic challenges in these communities is essential for promoting social equity, ensuring food security, and fostering a holistic approach to sustainable development in the region.

Methods

The research questions in this commentary stem from a significant gap: a lack of comprehensive understanding of how the COVID-19 pandemic specifically affects the socio-economic well-being of pastoral communities and livestock keepers in East Africa. These questions target specific areas for exploration, indicating the need for in-depth insights. They address nuanced economic challenges, the pandemic's impact on food security and resource access, health-related consequences on livestock and livelihoods, and coping mechanisms employed by these communities. The identified gap underscores the necessity for detailed knowledge in these domains, outlining areas where existing information is insufficient and further investigation is essential for a comprehensive understanding of the pandemic's impact. The information was gathered by searching known databases, specifically Google Scholar, Research4Life, and PubMed. The search strategies were guided by the main question, 'How has the COVID-19 pandemic impacted the overall socio-economic well-being of pastoral communities and livestock keepers in East Africa?' This was followed by four subsidiary research questions: 1) What are the specific economic challenges faced by pastoralists and livestock keepers in East Africa due to the pandemic? 2) How has the pandemic influenced food security and access to resources among pastoral communities? 3) What is the health-related impacts of COVID-19 on livestock and how do these affect the livelihoods of livestock keepers? 4) What coping mechanisms have pastoral communities and livestock keepers employed in response to the socio-economic challenges posed by COVID-19? Searching

was performed using keywords such as COVID-19, SARS-CoV-2, pandemic, socio-economic impact, well-being, pastoral communities, livestock keepers, and East Africa. Boolean operators (AND, OR, NOT) were used to combine keywords into the search string '(COVID-19 OR SARS-CoV-2) AND (socio-economic impact OR well-being) AND (pastoral communities OR livestock keepers) AND ("East Africa").'

The inclusion criteria considered studies published from January 2020 to the present, including peer-reviewed articles, systematic reviews, meta-analyses, observational studies, qualitative studies, and reports. The focus was on studies conducted in East African countries, including Kenya, Tanzania, Uganda, Rwanda, Burundi, and South Sudan, with participants being pastoral communities and livestock keepers. Studies reporting on various socio-economic outcomes, including economic well-being, food security, health, and access to resources, were included. Articles published in English were considered. Exclusion criteria involved papers published before January 2020, conference abstracts, letters, editorials, and opinion pieces. Non-peer-reviewed sources were excluded unless highly relevant, along with studies conducted outside East Africa or those not involving pastoral communities and livestock keepers in dealing with socio-economic impacts. Non-English articles were also excluded."

Results

Summary of key findings

This study examined a total of 420 publications, including reputable literature and book chapters. Among these, only 3.57% (n=15) of the publications provided the necessary information. Of these selected publications, the contribution of each source was as follows: Google Scholar 73.30% (=11), Research4Life 20% (n=3) and PubMed 6.67% (n=1). Six publications specifically addressed the economic challenges faced by pastoralists, while 26.67% (n=4) focused on the impact of COVID-19 on food security and resource access within pastoral communities. Additionally, 33.3% (n=5) explored the health-related effects of COVID-19 on livestock and their implications for the livelihoods of livestock keepers. Another 26.67% (n=4) of the publications investigated the coping mechanisms employed by pastoral communities and livestock keepers in response to the socio-economic challenges posed by COVID-19, as detailed in Table 1.

Table 1. Summary on the Socio-Economic Impact of COVID-19 on the Well-being of Pastoral Communities and Livestock Keepers in East Africa

s/n	Research question	Key findings	References
1	What are the specific economic challenges faced by pastoralists and livestock keepers in East Africa due to the pandemic?	<ul style="list-style-type: none"> Market disruptions impact livestock sales, affecting income and livelihoods significantly. Reduced demand leads to lower prices, impacting pastoralists' economic returns. Supply chain disruptions impact livestock health, productivity, and overall economic well-being. Livestock loss due to feed shortages, diseases, and limited veterinary care. 	(Griffith et al., 2021; Habermann et al., 2022; Ilukor et al., 2022b, 2022c; Mtimet et al., 2021; Wagura, 2021)

	<ul style="list-style-type: none"> • Credit restrictions hinder investment in and sustainability of livestock-related activities. • Income declines in livestock-related services, impacting herding and transportation activities significantly. • Pastoralists, heavily dependent on livestock income, face heightened economic vulnerability. • Pastoralists shift to alternative livelihoods due to limited off-farm opportunities. <p>Economic challenges contribute to food insecurity, impacting pastoral communities' well-being.</p> <ul style="list-style-type: none"> • Economic challenges limit pastoralists' access to crucial social services, exacerbating difficulties. 	
2	<p>How has the pandemic influenced food security and access to resources among pastoral communities?</p> <ul style="list-style-type: none"> • Reduced Availability of Livestock Products due to Limited access to livestock products. • Increased Food Insecurity as Economic challenges contributing to food insecurity. • Disrupted Livestock-Based Livelihoods which has Impact on income and overall well-being. • Limited Access to Essential Resources as Economic challenges restricting access to resources. • Altered dietary patterns through Changes in dietary habits due to economic constraints. • Compromised Nutritional Status which has Potential impact on the nutritional well-being of pastoral communities. • Food shortages due to challenges in maintaining a consistent and sufficient food supply. • Shifts in Livelihood Strategies which promoted Adoption of alternative strategies for sustenance. • Vulnerability to external shocks that increased susceptibility to external economic and environmental shocks. • Struggles in Accessing Social Services due to Economic difficulties hindering access to healthcare and education. 	(Abu Hatab et al., 2021; Griffith et al., 2020; Kansime et al., 2021; Tabe-Ojong et al., 2022)
3	<p>What are the health-related impacts of COVID-19 on livestock and how do these affect the livelihoods of livestock keepers?</p> <ul style="list-style-type: none"> • Increased Mortality Rates Thus Impacting the health and survival of livestock. • Spread of Diseases as Potential for increased transmission of diseases among livestock. • Limited Access to Veterinary Services posed Challenges in accessing essential veterinary care. • Disrupted Breeding Programs had Impact on breeding and reproductive success of livestock. • Decreased Productivity due to Reduced output and productivity of livestock due to health issues. • Strain on Livestock Keepers as Increased workload and challenges in managing sick animals. • Direct economic losses due to reduced livestock productivity and market value. • Feed Shortages caused Challenges in maintaining adequate nutrition for livestock. • Emotional and psychological impact on livestock keepers due to health concerns. • Fluctuations and uncertainties in the livestock market affecting income. 	(Abu Hatab et al., 2021; Egeru et al., 2020; Rahimi et al., 2022; Uyanga et al., 2021; Williams et al., 2022)
4	<p>What coping mechanisms have pastoral communities and livestock keepers employed in response to the socio-economic challenges posed by COVID-19?</p> <ul style="list-style-type: none"> • Diversification of Livelihoods by Exploring alternative income sources beyond traditional livestock-related activities. • Community support networks through establishing community support systems for mutual assistance during challenging times. • Livestock Management Innovations by Adopting innovative approaches in livestock management to enhance resilience. • Leveraging traditional knowledge and practices to cope with disruptions. • Acquiring new skills or enhancing existing ones to explore diversified livelihood options. • Partnering with non-governmental organizations and agencies for support and resources. • Seeking and utilizing information on market trends, government initiatives, and support programs. • Adjusting strategies to align with evolving market dynamics and demands. • Implementing effective water and grazing management practices to optimize resource use. • Seeking off-farm employment opportunities to supplement income from livestock keeping. 	(Griffith et al., 2020, 2021; Ilukor et al., 2022a, 2022c; Rahimi et al., 2022)

Discussion

Economic challenges faced by pastoralists and livestock keepers in East Africa due to the pandemic

The COVID-19 pandemic has imposed severe economic challenges on pastoralists and livestock keepers in East Africa. Movement restrictions and lockdowns have disrupted traditional practices, hindering the free-range grazing essential for livestock. A study conducted in Ghana revealed that the livestock production, specifically the supply of chicks, veterinary services, and marketability, was adversely affected by the COVID-19 pandemic (Adzitey et al., 2020). This has led to decreased livestock productivity, impacting the primary source of income and sustenance for pastoral communities. Market closures and trade restrictions have further exacerbated the economic strain, disrupted the buying and sold of livestock and related products, essential for the livelihoods of these communities. A study done in Uganda, showed that in the study, a majority of cattle traders affected by declining sales were from Karamoja by 43%, with a more significant decline in cattle sales there compared to Teso sub-region (Ilukor et al., 2022a). However, Karamoja showed a higher recovery rate, as traders diversified into other economic activities. In Teso, 63% of traders lost capital (Ilukor et al., 2022a).

The decline in tourism, often a significant source of income for pastoralists, has added to the economic woes. A Tanzanian study highlighted a notable tourism decline from 2020 to 2021 due to COVID-19, impacting the income of pastoralists, particularly Maasai communities. Relying heavily on tourism, many faced job losses, reduced customer flow to businesses, and financial struggles. In response, they sought alternative livelihoods, such as engaging in agriculture, fishing, handcraft, and establishing restaurants, shops, and boda-boda (motorcycle taxis) (Chebby et al., 2023). This diversification underscores the resilience of these communities in adapting to the economic challenges brought about by the pandemic and signifies their determination to secure alternative means of sustenance beyond the tourism sector. Increased prices for essential inputs such as animal feed have escalated operational costs, intensifying the financial burden on livestock keepers. Additional discoveries indicate that activities related to animal health and disease management were either delayed, halted, or abandoned due to the pandemic. The industry experienced a slowdown due to a lack of timely access to raw materials of livestock origin and a severe shortage of laborers resulting from the pandemic. While specific estimates of economic losses are unavailable, indirect measures strongly suggest substantial direct and indirect setbacks for the sector. The global data on animal health and disease, along with the experiences gained in managing these aspects before, during, and after the COVID-19 pandemic, will offer crucial insights for enhancing preparedness in addressing future challenges (Rahman et al., 2021). The cumulative effect is a precarious economic situation, jeopardizing the resilience and stability of East African pastoralists and underscoring the urgent need for targeted interventions to address the specific economic challenges posed by the ongoing pandemic.

How has the pandemic influenced food security and access to resources among pastoral communities

The COVID-19 pandemic has significantly disrupted food security and access to resources among pastoral communities in East Africa. Movement restrictions and lockdowns have impeded traditional nomadic practices, limiting the free movement of livestock and access to crucial grazing areas and water sources. This disruption directly affects the health and productivity of animals, compromising the primary source of sustenance and income for pastoralists. COVID-19 significantly impacts food security in pastoralist communities, with direct and indirect consequences (Mardones et al., 2020). The pandemic imposes restrictions on agricultural workers, disrupting vital activities like planting and harvesting. This disturbance causes shifts in agricultural livelihoods, influencing the availability and safety of food. Concerns arise for the health and welfare of both plants and animals in pastoralist settings. Repercussions extend to human nutrition and health due to disruptions in the food supply chain. The pandemic has spurred changes in public policies to address these challenges, highlighting the need for comprehensive strategies to safeguard food security among pastoralists both during and after the COVID-19 pandemic (Griffith et al., 2021; Mardones et al., 2020).

Market closures and trade restrictions have further strained the situation, hindered the buying and sold of livestock and related products. A Zimbabwean study indicated that the pandemic has broadly impacted the entire food supply chain, spanning from production systems and input supply to storage, distribution, processing, packaging, and retail marketing (Rukasha et al., 2021). The research underscores that COVID-19 significantly exacerbates an already precarious food security situation, primarily due to the prevailing poor macroeconomic conditions and consecutive years of drought in Zimbabwe (Rukasha et al., 2021). The resulting economic downturn has left pastoral communities grappling with financial challenges, impacting their ability to purchase essential resources. With the disruption in the supply chain, there is a heightened risk of food shortages and increased prices for essential items, exacerbating food insecurity. The cumulative effect of these challenges poses a serious threat to the well-being and resilience of pastoral communities, highlighting the urgent need for targeted interventions to address food security and resource access in the context of the ongoing pandemic.

The health-related impacts of COVID-19 on livestock and how do these affect the livelihoods of livestock keepers

The health-related impacts of COVID-19 on livestock in East Africa have been multifaceted and have had profound implications for the livelihoods of livestock keepers. The pandemic has disrupted veterinary services, leading to challenges in disease prevention and treatment for livestock. This has resulted in increased morbidity and mortality rates among animals, affecting the overall health and productivity of livestock herds (Rahman et al., 2021). Quarantine measures and movement restrictions

have hindered the timely transportation of livestock, affecting trade and market access.

Livestock keepers, heavily reliant on the well-being of their animals for income and sustenance, have faced economic hardships due to reduced productivity and market disruptions (Adzitey et al., 2020). The inability to promptly address health issues in livestock has not only compromised animal welfare but has also diminished the economic resilience of livestock-dependent communities. The repercussions of COVID-19 in Ethiopia are felt in pastoralist and livestock-keeping communities, especially those situated in lowlands. These regions, primarily inhabited by pastoralists and agro-pastoralists, heavily rely on livestock products for sustenance and income through exports. Intensive production systems like fattening centers encounter difficulties due to shortages in feed, veterinary drugs, and other livestock extension services caused by movement restrictions and decreased agro-industrial production. This disruption not only impacts local food sources but also poses threats to animal health as necessary care and feed supplies are compromised (Ababulgu et al., 2022). Additionally, the main export markets, especially during significant events like Ramadan and Hajj, face uncertainty and potential losses (Ababulgu et al., 2022). The health-related ramifications of COVID-19 on livestock thus represent a significant threat to the livelihoods and economic stability of livestock keepers in East Africa.

The coping mechanisms employed by pastoral communities and livestock keepers in response to the socio-economic challenges posed by COVID-19

In response to the socio-economic challenges posed by COVID-19 in East Africa, pastoral communities and livestock keepers have implemented various coping mechanisms to navigate the unprecedented difficulties. Adaptation strategies include diversifying income sources by engaging in alternative livelihood activities such as crop farming or non-agricultural ventures. Some have explored new marketing channels or formed cooperatives to collectively address market disruptions. Community-based support systems, where resources and information are shared, have emerged to mitigate the impact of movement restrictions on traditional pastoralist practices.

Additionally, there is an increased focus on building resilience through savings groups and insurance schemes tailored to the unique needs of pastoralists. Innovation in technology has played a role, with the use of mobile platforms for market information and financial transactions. Despite facing substantial challenges, the resilience and resourcefulness of pastoral communities in East Africa are evident in the diverse coping mechanisms employed to sustain their livelihoods in the face of the ongoing pandemic. For instance, in Tanzania, pastoralists, particularly those employed in tourism, sought alternative sources of income such as fishing, Boda-Boda (motorcycle taxis), agriculture, and livestock keeping as coping mechanisms during challenging times (Chebby et al., 2021, 2023). An investigation into the coping strategies adopted by cattle traders in Uganda to counter the impact

of COVID-19 revealed diverse approaches. These strategies encompassed activities like crop cultivation, charcoal burning, selling food items, and engaging in boda-boda riding (Ilukor et al., 2022a). Additionally, some traders chose to refrain from any economic activity altogether. In an effort to mitigate the effects of the pandemic, traders adhered to standard operating procedures (SOPs), including wearing face masks, practicing hand-washing and sanitizing, and maintaining social distancing, with 2.3% compliance (Ilukor et al., 2022a).

Future research

Future research should extend beyond the current commentary on the socio-economic impact of COVID-19 on pastoral communities in East Africa. It should delve into specific aspects like the long-term effects of economic challenges, resilience strategies, and the effectiveness of interventions proposed. Exploring regional variations and community-specific adaptations is crucial for nuanced insights. Additionally, a comparative analysis with pre-pandemic data could enhance understanding. Investigating the evolving role of technology in sustaining pastoral livelihoods amid pandemics and addressing mental health impacts remains a fruitful avenue. An interdisciplinary approach, combining socio-economic, environmental, and health perspectives, will provide a holistic understanding for more effective policies and interventions.

Recommendations

To mitigate these challenges, recommended strategies involve the implementation of targeted interventions. Policymakers should concentrate on formulating and executing strategies that cater to the specific needs of pastoral communities, including support for alternative livelihoods, improved access to veterinary services, and sustainable resource management. Strengthening social safety nets and facilitating market access for livestock products are integral components of these interventions. Moreover, collaboration among governments, NGOs, and local communities is vital for the formulation and execution of effective policies. There should be a focus on enhancing the resilience of pastoralists through capacity-building initiatives, integrating technology for market information, and investing in the health and education of pastoral communities. In essence, a holistic and collaborative approach is imperative to alleviate the socio-economic impacts of COVID-19 on pastoral communities and livestock keepers in East Africa, fostering resilience and sustainable development in the post-pandemic era.

Limitations of the Study

The commentaries encounter limitations. Data scarcity hampers a comprehensive understanding, relying on published literature introduces potential bias, and the temporal scope may not fully capture the prolonged effects. Geographical focus on East Africa limits generalizability, and methodological variations may impact coherence. The diverse socio-economic and cultural contexts within East Africa's pastoral communities pose challenges, and the dynamic nature of the pandemic's

evolution may not be entirely reflected. Despite these constraints, the chapter strives to contribute valuable insights into the subject matter.

Conclusion

In conclusion, the commentary emphasizes the profound challenges confronting these communities in the aftermath of the pandemic. The widespread disruptions in livestock-related activities, such as breeding, trade, tourism, veterinary services, and the marketing of livestock products, as well as the supply of animal feeds, have seriously compromised both the economic stability and food security of pastoralists in the region. The chapter underscores the multifaceted nature of the impact, addressing not only economic aspects but also the health and well-being of both animals and the communities that depend on them.

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