

WATER SCARCITY ROLE ON VIOLENT CONFLICTS AMONGST PASTORALIST COMMUNITIES IN TIATY SUB-COUNTY, BARINGO COUNTY KENYA

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ABSTRACT

This study delved into the intricate relationship between water scarcity and conflict dynamics within pastoralist communities, shedding light on the multifaceted factors that influence conflicts arising from resource scarcity. Through a comprehensive analysis of social, economic, and environmental dimensions, alongside conflict intensity and stakeholder involvement, the study seeks to offer a nuanced understanding of conflict drivers and inform effective mitigation strategies. The study's theoretical framework was guided by the resource curse theory as well as the environmental scarcity theory. A descriptive research design was used and the target population for the study was 73,424 residents of Tiaty Sub County and through the use of multistage sampling, 156 respondents were chosen to participate in the study. Structured questionnaires were used to collect quantitative data. The collected data was analysed using the Statistical Package for Social Sciences version 21. Descriptive statistics were analysed and presented in percentages and frequencies while inferential statistics was analysed through the use of the Pearson correlation coefficient. The findings were presented in the form of tables. The researcher ensured careful ethical considerations. The correlation analysis to determine the effect of Social Factors on violent conflicts shows a significant correlation existed ($r = 0.785$, $p < 0.05$). Pearson's correlations coefficient was higher than 0.5 suggestion a strong relationship existed between the two variables. The study had also sought to determine the effect of economic factors and violent conflicts, the analysis yielded a Pearson correlation coefficient of $r = 0.746$, $p < 0.05$; indicating that a strong relationship existed between the two variables. The study also sought to determine the effects of environmental factors on violent conflicts. The analysis yielded Pearson correlations coefficient is ($r = 0.781$, $p < 0.05$) to indicate a strong relationship between the two variables. Social Factors proved to have the highest positive correlation with Violent Conflicts It is evident that all the independent variables could explain the levels of Violent Conflicts in the region. Conflict and human security generating factors are closely intertwined. The prevalent conflicts and the declining environmental security in pastoral areas is a result of a combination of factors that include competition over scarce, vital natural resources. The situation is worsened by harsh climatic condition and ineffective management and utilization mechanisms.

Key Words: Social Factors, Economic Factors, Environmental Factors

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INTRODUCTION

The sweeping global ramifications of water scarcity-induced conflicts manifest palpably within the United Nations' Sustainable Development Goals (SDGs). Goal 6 resonates as it underscores the imperativeness of clean water and sanitation, acknowledging the pivotal role of water scarcity within the broader tapestry of development and peace-building endeavours. Moreover, the World Economic Forum's consistent identification of water crises as one of the paramount global risks accentuates the far-reaching impacts of water scarcity on economic solidity and social cohesion. Amidst an epoch of unparalleled environmental trials, the pivotal role of water scarcity in sculpting violent conflicts necessitates a comprehensive and forward-looking approach. The resonance of challenges posed by water scarcity has prompted attention and discourse at international platforms, ushering in initiatives that underscore the urgency for collaborative frameworks and sustainable remedies.

Water scarcity, a pressing global concern driven by the forces of climate change, population growth, and resource mismanagement, has drawn increasing attention due to its profound socio-economic and political ramifications. Nowhere are these implications more pronounced than in arid and semi-arid regions, where the inherent scarcity of water resources casts a shadow over daily existence. Within these landscapes, pastoralist communities stand at the forefront of vulnerability, with their very subsistence and livelihoods intricately interwoven with the availability of water for both themselves and their livestock.

In the context of Tiaty Sub-County within Baringo County, Kenya, the challenge of water scarcity looms large over pastoralist communities. A study conducted by McCabe and Leslie (2005) elucidated the pivotal role of water access in shaping the migratory patterns and settlement strategies of pastoralists in this region. Their findings underscored how pastoralist groups adeptly adjust their movements and resource utilization to secure access to water points, a practice that can heighten competition and, in turn, lay the groundwork for potential conflicts.

Further amplifying this narrative, a study led by Schilling et al. (2017) delved into analogous conflicts in northern Kenya, spotlighting the compounding influence of demographic pressures, land degradation, and limited institutional support in fuelling violent confrontations among pastoralist groups. This multidimensional inquiry unmasked the intricate interplay of environmental, social, and political factors that conspire to drive conflicts within pastoralist societies.

While these localized studies provide invaluable insights, the reverberations of water scarcity-induced conflicts extend far beyond specific regions. The World Bank's comprehensive report "High and Dry: Climate Change, Water, and the Economy" (2016) laid bare the stark reality that water scarcity can undermine economic growth, deepen poverty, and even serve as a precursor to social instability. This somber revelation underscores the imperativeness of deciphering the precise mechanisms through which water scarcity intertwines with conflicts within pastoralist enclaves, such as those within Tiaty Sub-County.

Turning the spotlight to the ecological fragility of such regions, a study by Opiyo et al. (2019) showcased the pronounced vulnerability of pastoralist communities to the vagaries of climate variability. The research illuminated the direct correlation between shifts in rainfall patterns and subsequent fluctuations in water availability, which in turn contribute to conflicts rooted in competition for essential resources. This intricate interplay lays bare the complex feedback loops that entwine environmental stressors and conflict dynamics within these communities.

Delving into the policy and governance domain, the work of Moritz et al. (2017) in northern Kenya emphasized how inadequate infrastructure and governance systems can serve as catalysts, exacerbating conflicts and impeding equitable access to vital water resources. Recognizing the influential role of governance structures in the escalation of conflicts is pivotal for devising effective strategies to address the tumultuous waters of water scarcity-induced disputes in Tiaty Sub-County.

In a quest for comparative perspectives, insights gleaned from analogous pastoralist contexts can illuminate potential pathways for conflict resolution. For instance, the study by Catley et al. (2013) in Somalia spotlighted the indispensable role played by traditional conflict resolution mechanisms in mediating conflicts born from resource scarcity. Extrapolating these findings to the context of Tiaty Sub-County might unveil potential avenues for amelioration.

Amid the escalating global tide of water scarcity, the experiences of pastoralist communities in Tiaty Sub-County resonate as a significant thread in the broader fabric of climate-induced conflicts. The seminal work of Homer-Dixon (1994) on environmental scarcity and its ramifications on violent conflicts lends a theoretical framework for deciphering the intricate tapestry of interactions between resource paucity, human behavior, and conflict dynamics.

Envisioning this framework within the context of Tiaty offers a unique vantage point to decode the complex nexus between water scarcity and the eruption of conflicts among pastoralists.

Beyond the immediate terrain of conflict, contemplating the far-reaching implications of water scarcity on education and health within pastoralist communities unveils a comprehensive portrait of vulnerability. The study conducted by Lind et al. (2020) in Mali elucidated how constrained access to clean water reverberates beyond livelihoods, casting a shadow over education and health outcomes. Extending these insights to Tiaty Sub-County unfurls additional strata of vulnerability and latent triggers for conflict.

To comprehensively navigate the role of water scarcity in incubating violent conflicts among pastoralist communities in Tiaty Sub-County necessitates a multifaceted approach. This endeavor entails skillfully weaving together the tapestry of ecological studies, socio-economic analyses, gender perspectives, and cross-contextual research. By intertwining these threads of understanding, the aspiration of this study is to unfurl the intricate web of factors that weave conflicts within the tapestry of water scarcity. In doing so, it seeks to illuminate the catalytic role of water scarcity in propelling violent conflicts among pastoralists in Tiaty Sub-County, Baringo County, Kenya. The insights garnered from this endeavor hold the potential to underpin contextually pertinent interventions that grapple with the labyrinthine challenges posed by water scarcity-induced conflicts, while also bolstering the resilience and well-being of pastoralist communities not merely in Tiaty but in analogous landscapes across the globe.

Numerous empirical researches have been conducted to explore the complex relationship between water shortage and pastoral communities. These studies have provided useful insights into the various coping techniques, adaptive measures, and intricate dynamics involved in this nexus. In their study, Abdi et al. (2020) conducted a targeted investigation in the Borana Zone of Ethiopia, a region characterized by frequent water scarcity that presents difficulties for pastoralist communities. By employing a rigorous combination of surveys, interviews, and participatory observations, the research shed light on the remarkable resilience exhibited by these communities. The aforementioned actions demonstrated their resourcefulness in developing collective water management systems, excavating shallow wells, and promoting water user associations, illustrating the effective utilization of innovation to ensure water availability and maintain sustainable livelihoods.

The examination of gendered aspects in the acquisition and exploitation of resources, such as water, was brought to light by Kiptot et al. (2018). The researchers directed their attention on rural areas in Western Kenya, where they examined the impact of gender norms on the ability of individuals to use agroforestry resources, such as water sources. Gender-disaggregated surveys, focus group discussions, and interviews have provided valuable insights into the intricate dynamics of gender roles in the context of decision-making, access, and allocation of water resources. The aforementioned findings have significant implications within the wider academic conversation surrounding water scarcity, shedding light on the complex social processes that are intertwined with the management of resources.

Liao and Sowers (2016) have developed a conceptual framework that offers a theoretical perspective for examining the potential conflict dynamics that emerge from water scarcity. While not explicitly associated with pastoral groups, the typology of conflicts they experience, which includes both straightforward disputes over water access and more intricate, disputed conflicts, provides a valuable framework for examining water-related conflicts in many settings. This conceptual framework facilitates a comprehensive comprehension, surpassing the confines of certain academic fields, and enhancing the understanding of the intricate interconnections between water scarcity and the socio-political landscape.

In their comprehensive study, McCusker and Veen (2015) provide a comprehensive analysis that sheds light on the complex interplay between water scarcity and conflict in emerging areas. Although not just focused on pastoral groups, their investigation provides valuable insights into the wider dynamics of disputes arising from water scarcity. This study undertakes a thorough investigation to enhance our understanding of the complex interactions between environmental, social, and political elements that intensify the likelihood of conflict in situations of water scarcity.

The empirical research conducted in this field has contributed to a complete understanding of the complex relationship between water scarcity and pastoral communities. The amalgamation of several perspectives provides a wide range of coping methods, governance systems, social interactions, and adaptive measures that are applicable in various settings. The amalgamation of these empirical accounts enhances the scholarly inquiry by contributing a diverse range of insights. This enriches the investigation into sustainable resource management, conflict resolution, and community resilience in pastoral settings that face water scarcity concerns.

Statement of the Problem

The issue of water scarcity is a significant global challenge that has been exacerbated by the impacts of climate change, population expansion, and inadequate management of resources. The implications of this have far-reaching effects on several aspects of society, including socio-economic and political realms, leaving a significant impact. This difficulty becomes particularly pronounced in arid and semi-arid countries, where the scarcity of water supplies gives rise to several difficulties. Among the groups facing the greatest vulnerability are pastoralist communities, whose survival and the well-being of their cattle are intricately linked to the accessibility of water resources.

Dong (2016) conducted a study on the United Nations Convention on the Law of Non-Navigational Uses of International Watercourses. The study aims to examine a possible framework for effectively dealing with the complex range of issues related to transboundary water management and the fair distribution of this essential resource. The examination of an international treaty provides valuable insights into the legal and institutional mechanisms that might guide cooperative efforts among countries that share watercourses. Despite the significant contributions of Dong's research, there is still a gap in understanding how these frameworks might be customized and implemented in the specific context of pastoralist communities dealing with water scarcity-induced conflicts.

When examining the particular context of Tiaty Sub-County, located inside Baringo County, Kenya, one can clearly observe the significant issue of water scarcity that affects pastoralist populations. The ongoing dispute around limited water supplies signifies the potential for increasing conflicts, posing a threat to the welfare of communities and the foundation of socio-economic stability. The current body of research has shed light on the overall connection between water scarcity and conflicts. However, there is still a gap in understanding the specific dynamics within pastoralist communities in the Tiaty Sub-County area.

Furthermore, this lack of contextual information highlights the necessity for a detailed comprehension of the small-scale forces driving conflict dynamics in Tiaty Sub-County. The intricate interplay of socio-cultural norms, economic realities, and environmental elements in this particular community necessitates a focused

investigation to uncover the specific catalysts that contribute to the intensification of conflicts among pastoralists. The objective of this research undertaking is to construct a thorough map of the factors that contribute to conflicts within the complex dynamics of the pastoralist milieu.

Nnadozie, Debela, and Solomon (2019) undertake a significant scholarly endeavor as they delve into the intricate interplay between ethnicity, water scarcity, and conflict within the pastoralist landscapes of Kenya. The analysis conducted on the impact of ethnic dynamics in intensifying conflicts arising from water scarcity provides valuable insights into the complex interplay of socio-cultural factors that contribute to the escalation of these conflicts. This investigation highlights the significant connections between the paucity of water resources and pre-existing tensions based on ethnic divisions, emphasizing the urgent need for conflict resolution solutions that are specifically designed for particular circumstances. Despite the significant impact of this contribution, there is a gap in fully evaluating the wide range of ecological, socio-economic, and governance elements that contribute to the emergence of conflicts resulting from water scarcity among pastoralist groups.

Moreover, there is a significant lack of research on the empirical foundations of this subject, particularly within the specific context of pastoralist communities in Tiaty Sub-County. The lack of empirical research in this area impedes a comprehensive understanding of how these communities effectively manage the complex challenges arising from water constraint. Comprehensive inquiry is needed to delve into the viewpoints that individuals bring and the adaptive strategies they employ in order to negotiate the challenging circumstances they face. This exploration calls for specific empirical research to capture the nuanced narratives of pastoralists as they address conflicts arising from water scarcity.

Moreover, the current body of research, despite its abundance and diversity, interconnects elements of competition for resources, frameworks of governance, and environmental consequences within the wider framework of conflicts arising from water shortage. However, there remains a gap in the successful incorporation of these dimensions into a unified and cohesive structure that allows for a comprehensive understanding of the complex interactions between ecological, socio-economic, and cultural elements. These factors converge and intensify conflicts among pastoralist communities in the Tiaty Sub-County.

The interplay between various insights and gaps in knowledge within this symphony serves to fulfill an academic imperative that goes beyond mere theoretical examination, while also carrying significant practical implications. The significance of these explorations is not limited to the advancement of knowledge, but also encompasses their role as the foundation for the development of practical interventions and policies. In the context of an increasingly complex global environment marked by growing concerns over water scarcity, there is a pressing need to thoroughly examine the role of water as a catalyst for conflicts. This examination takes on greater importance due to the potential consequences it holds. In the Tiaty Sub-County, similar to numerous other regions across the globe, this investigation serves as a guiding principle, directing efforts towards the protection of welfare and sustenance, relieving the disadvantaged from the consequences of water scarcity.

Objectives of the study

The main goal of this study was to explore water scarcity role on violent conflicts among pastoralist communities in Tiaty Sub-County, Baringo County, Kenya. The specific objectives were;

- Examine the social, factors contributing to conflicts caused by water scarcity in Tiaty Sub-County.
- Investigate how economic factors influence conflicts over water resources among pastoralist groups in Tiaty Sub-County.
- Explore the relationship between environmental factors, and water scarcity in shaping conflict dynamics within pastoralist communities in Tiaty Sub-County.

The study was guided by the following Research questions;

- What are the social factors that contribute to conflicts caused by water scarcity in Tiaty Sub-County?
- How do economic factors influence conflicts over water resources among pastoralist groups in Tiaty Sub-County?
- What is the relationship between environmental factors and water scarcity in shaping conflict dynamics within pastoralist communities in Tiaty Sub-County?

LITERATURE REVIEW

Theoretical Framework

Resource Curse Theory

The Resource Curse Theory, often associated with the adverse consequences of resource abundance on economic and political development, can be extended to offer insights into situations of resource scarcity, such as water scarcity (Ross, 2001; Karl, 2007). This theory posits that regions or communities endowed with valuable resources, when not properly managed, may experience unfavourable outcomes, including conflicts, economic distortions, and political instability. Although initially formulated within contexts of resource abundance like oil, gas, and minerals, the foundational principles of the theory can be extrapolated to cases where essential resources are scarce (Karl, 2007).

The Resource Curse Theory, championed by economists and scholars including Richard Auty, Jeffrey Sachs, and Paul Collier, has undergone significant evolution since its inception. Initially centred on the adverse economic consequences of excessive reliance on non-renewable resource exports in developing nations, this theory has progressively broadened its scope. It now encompasses a comprehension that resource abundance can engender multifaceted challenges, extending beyond mere economic repercussions to encompass governance deficiencies, conflict, and environmental deterioration. Scholars such as Paul Collier have further honed this theory, highlighting the pivotal role played by institutions, governance structures, and policies in shaping the trajectories of resource-rich countries. Furthermore, the theory has adapted to incorporate renewable resources, acknowledging their potential to spark conflict, aligning with the global shift towards sustainable development. In the current study, the Resource Curse Theory holds relevance as it aids in comprehending how water scarcity, akin to resource scarcity, may influence conflict dynamics among pastoralist communities. Leveraging the theory's insights into the complexities associated with resource abundance and its impact on governance, conflict, and socio-economic development, it provides a valuable framework for dissecting the nexus between water scarcity and violent conflicts in the study area.

In the context of this research on water shortages and conflicts among pastoralist groups in Tiaty Sub-County, the Resource Curse Theory provides a relevant framework to examine the potential impact of constrained water resources on the dynamics of conflict. The theory has traditionally been employed in contexts characterized by ample resources, but its potential applicability to contexts marked by limited resources offers a fresh lens for examination in your research.

Environmental Scarcity Theory

According to the notion of environmental scarcity proposed by Homer-Dixon in 1994, environmental shortage destabilizes social effects and makes disputes likely. When properly managed, conflict is not a negative phenomenon; rather, it may aid in driving democracy, social progress, and growth. In the absence of local and national institutions to manage disputes resulting from environmental shortage, however, confrontations can become violent. Environmental scarcity indicates a loss in renewable resources such as water. Cycles of violent conflicts can be fuelled by political systems, inadequate institutions, and dividing social interactions. These conflict causes are numerous, and when they converge with variables like as inequity and ethnic polarization, the conflict can escalate into violence.

The Environmental Scarcity Theory, influenced by the contributions of notable scholars like Thomas Homer-Dixon, Norman Myers, and Michael Renner, has undergone significant development. Initially, it centred on the direct link between environmental scarcity, including resources like water and arable land, and conflicts. However, as global recognition of environmental degradation and resource depletion grew, the theory evolved to encompass a broader perspective. It now incorporates intricate factors such as population growth, migration, and socio-political dynamics to elucidate how environmental scarcity can trigger conflicts at various scales, ranging from local to international. Furthermore, the theory has adapted to consider the pivotal role played by governance structures and institutions in mediating or exacerbating the consequences of environmental scarcity. In the current study, the Environmental Scarcity Theory assumes relevance by providing insights into how water scarcity, a form of environmental scarcity, might contribute to conflicts within pastoralist communities. The theory's emphasis on the interconnectedness of environmental, demographic, and social factors aligns seamlessly with the study's multifaceted approach to analyze the intricate relationship between water scarcity and violent conflicts in the study area. Through the consideration of the evolution and applicability of these theories, the study gains access to established frameworks that enhance our comprehension of the complex interplay between water scarcity and conflicts among pastoralist communities in Tiaty Sub-County, Baringo County, Kenya.

Empirical Literature Review

The fascinating findings of Lelo and Muthoni (2019) are tremendously relevant to our investigation of Social Factors. The research conducted by the authors explores the changing dynamics of family structures and gender roles, which are closely intertwined with the issue of water availability and distribution. As the availability of water diminishes, the evolving dynamics inside homes might give rise to controversial issues, mirroring the larger societal transformations. Similarly, the notable research conducted by Ouma et al. (2017) emphasizes the influential role that deeply rooted cultural norms and traditional institutions have in defining the dynamics of conflict. The multifaceted interplay of societal norms and values significantly contributes to the intricate nature of conflicts related to water resources, hence emphasizing the imperative of acquiring a profound comprehension of social complexities.

The study conducted by Ondimu et al. (2020) provides significant contributions to our understanding of the extensive economic consequences associated with water scarcity, with a particular focus on economic factors. Due to the scarcity of water resources, pastoralist groups are driven to seek alternative forms of income, so unintentionally exacerbating competition and tensions around the access to vital resources. In addition to this viewpoint, the comprehensive research carried out by Bollig and Lesorogol (2016) emphasizes the manner in which conflicts permeate economic structures, causing disruptions in trade networks and markets. This, in turn, intensifies the risks involved and exacerbates the state of uncertainty.

Environmental deterioration plays a crucial role within the domain of Environmental Factors. Muli et al. (2018) conducted a comprehensive examination to investigate the relationship between the decline in soil quality and water availability, and its role in triggering disputes related to essential water resources. The results of their study highlight the complex relationship between ecological vulnerability and the intensification of conflicts, underlining the importance of addressing both environmental and social aspects. The concept mentioned above is supported by the findings of Kibii et al. (2015), whose study highlights the correlation between environmental deterioration, particularly deforestation, and the intensification of resource rivalry, hence increasing the likelihood of conflicts.

This research aims to offer a complete perspective on the complex processes that drive disputes arising from water scarcity in pastoralist communities in Tiaty Sub-County by integrating the insights obtained from several empirical studies. The synthesis of these discoveries highlights the complex character of these disputes, emphasizing the significance of comprehensive and contextually appropriate approaches for resolving conflicts and ensuring the sustainable management of resources. In our pursuit of a more

comprehensive understanding, our research seeks to elucidate the mechanisms by which communities grappling with water scarcity-induced conflicts might cultivate resilience, foster cooperation, and achieve harmonic cohabitation.

In the context of conflicts over water resources among pastoralist groups, economic factors play a pivotal role in shaping the dynamics and outcomes of these disputes. Economic inequalities within pastoralist communities can intensify conflicts over water resources, as highlighted in a study by Binswanger-Mkhize and Savastano (2017) on pastoralist communities in East Africa. This research found that economic disparities were a significant driver of conflicts over resources, including water. Wealthier pastoralists often had better access to water sources, exacerbating tensions within the communities.

Livestock ownership, which is a central aspect of the economic life of pastoralist communities, is closely tied to water access. Conflicts can arise when competition for limited water sources threatens the well-being of livestock, as demonstrated by research conducted by Morton et al. (2018) in pastoralist regions of Ethiopia. This study illustrated how economic factors, such as the value of livestock and its contribution to household income, were central to these conflicts.

Moreover, the economic dependence of pastoralist communities on natural resources like water and grazing land makes these resources central to their livelihoods. Economic factors, such as fluctuations in livestock prices or the availability of markets for pastoral products, can influence the level of competition and cooperation among pastoralists regarding water resources. Lind et al. (2019) conducted research in northern Kenya, examining the economic dependence of pastoralist communities on water and grazing resources. Their findings illustrated how economic considerations, such as drought-related livestock losses, influenced resource management decisions and conflicts over water.

Infrastructure development projects in pastoralist regions, such as the construction of dams or irrigation systems, can significantly alter the access and availability of water resources. These projects may benefit some groups economically while disadvantaging others, potentially leading to conflicts over water allocation and use. Houdret and Oloruntoba (2016) conducted research in the Sahel region, examining the impact of infrastructure development on pastoralist communities. The study revealed how economic disparities emerged due to infrastructure projects, leading to conflicts over water resource allocation.

In summary, understanding how these economic factors intersect with water scarcity and pastoralist livelihoods is essential for comprehending the full spectrum of influences that contribute to conflicts over water resources among pastoralist groups. Addressing economic dimensions in conflict resolution and resource management strategies is crucial for promoting sustainable solutions and peace within these communities. These supporting studies provide empirical evidence for the assertion that economic factors are integral to conflicts over water resources among pastoralist groups.

The relationship between environmental factors and water scarcity plays a significant role in shaping conflict dynamics within pastoralist communities. Environmental stressors, such as prolonged droughts, diminishing water sources, and reduced forage availability, are key contributors to water scarcity in pastoralist regions. As highlighted in a study by Ouedraogo et al. (2016) in Burkina Faso's pastoralist communities, these factors can lead to heightened competition for limited water resources, escalating conflicts as pastoralists strive to secure access to dwindling water supplies.

Moreover, the fragile ecosystems of arid and semi-arid regions where pastoralist communities often reside are sensitive to environmental changes. Overexploitation of water resources or improper land management practices can exacerbate environmental degradation, making water scarcity more acute. Research by Galvin et al. (2015) in semi-arid regions of East Africa highlighted how environmental degradation and land mismanagement exacerbated water scarcity and contributed to conflicts among pastoralist communities.

Environmental factors can foster conflicts not only within pastoralist communities but also between different user groups sharing the same water sources. For example, competition for water resources between pastoralists and neighboring settled agricultural communities can be exacerbated by environmental stressors that reduce overall water availability in the region, as noted in research by Ahmed and Mustefa (2019) in pastoralist regions of Ethiopia.

Furthermore, environmental factors influence the adaptation strategies employed by pastoralist communities. When faced with water scarcity due to changing environmental conditions, pastoralists may develop adaptive mechanisms such as water sharing agreements, rotational grazing, or the construction of small-scale water harvesting infrastructure. However, the success of these strategies can vary depending on the specific environmental context and the degree of cooperation among community members, as examined in a study by Adger et al. (2020).

Lastly, seasonal changes in environmental factors, including rainfall and temperature, play a crucial role in determining water availability in pastoralist regions. Seasonal fluctuations in water sources can lead to predictable patterns of resource competition and conflicts, influencing pastoralists' strategies to cope with these variations, as explored in research by McCabe et al. (2018) in pastoralist regions of Kenya.

Understanding the intricate relationship between environmental factors and water scarcity is vital for unraveling the complexity of conflict dynamics within pastoralist communities. These factors are interconnected and dynamic, making it essential to consider their influence on resource management practices, adaptive strategies, and the potential for conflict resolution. Addressing environmental factors alongside economic and social dimensions is crucial for developing holistic approaches to mitigate water-related conflicts and promote sustainable resource management among pastoralist communities.

Conceptual framework

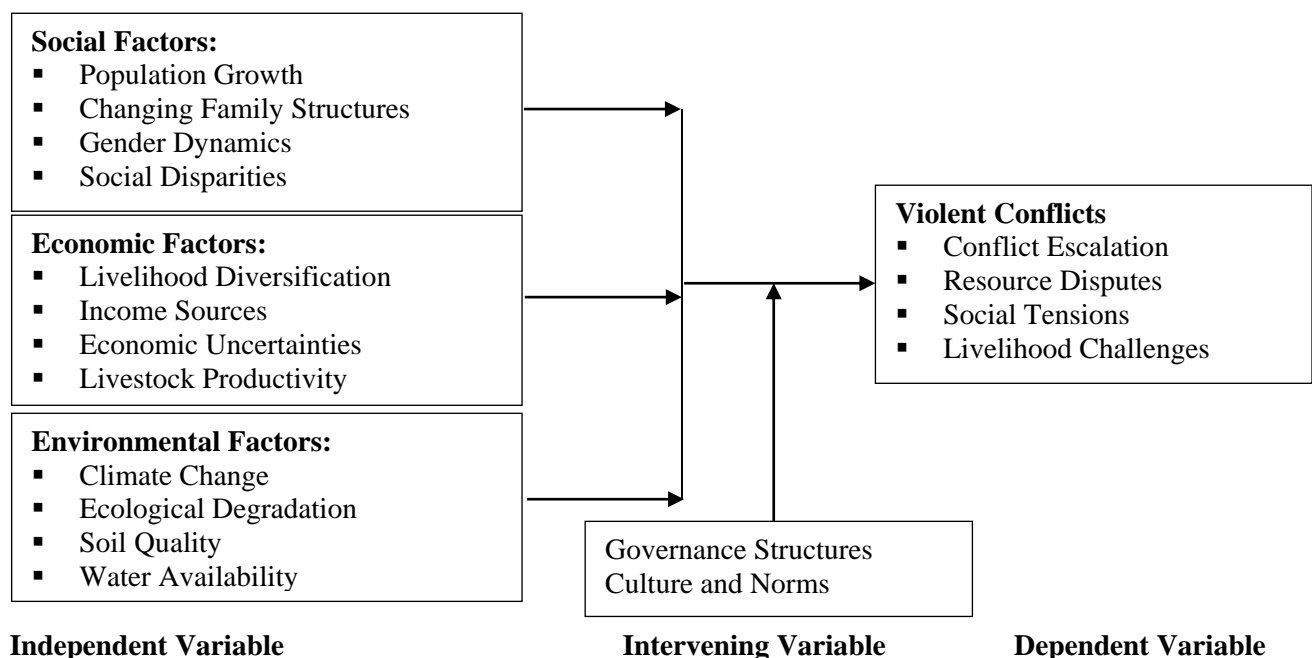


Figure 1: Conceptual Framework

Source: Researcher (2021)

METHODOLOGY

This study employed a descriptive survey as its method of investigation. According to Nayak and Singh (2021), a descriptive survey research design is one that aids in seeing and documenting occurrences of

interest. This design was described as one that allows observations of interesting phenomena. Thus, the observations are more trustworthy because they are based on scientific procedures, which are superior to accidental observations. How, what, and why a phenomenon occurs was one of the objectives of the research strategy employed in this particular study. This objective was accomplished with the aid of the research design. The descriptive survey design was useful in that it provided a deeper understanding of a variety of water conflict characteristics found in Baringo County. The design was chosen for this investigation due to its simplicity of implementation and its ability to aid the extrapolation of the investigation's findings. In conclusion, the descriptive survey design was advantageous because it contributed to the collection of data through interviews and questionnaires (Creswell & Creswell, 2017)

FINDINGS AND DISCUSSION

The response rate was as follows:

Table 1: Response Rate

Response	Frequency	Percentage (%)
Returned Questionnaires	156	100
Unreturned Questionnaires	0	0
Total	156	156

Source: Research Data, (2022)

As demonstrated in Table 1 Out of the total of 156 surveys distributed, all 156 were successfully completed and returned. This resulted in a response rate of 100%. According to Mugenda & Mugenda (2003), a response rate of 50% was deemed sufficient for the purposes of analysis and reporting. A response rate of 60% was considered to be of good quality, while a response rate of 70% or higher was regarded as exceptional. Hence, the study's response rate of 100% can be deemed as exceptional.

Reliability Results

The third step was doing reliability analysis using Cronbach's Alpha, a statistical measure that assesses the internal consistency of a scale by determining whether the items within it effectively measure the same construct. Frankfort-Nachmias and Nachmias (2012) created a standard for the study by setting the Alpha value criterion at 0.7. Cronbach Alpha coefficients were computed for each objective, as presented in Table 2.

Table 2: Reliability Results

Variables	Cronbach Alpha	Number of Items
Violent Conflicts	0.738	5
Economic Factors	0.740	5
Environmental Factors	0.757	5
Social Factors	0.757	5
Overall Reliability	0.748	5

Source: Research Data, (2022)

In Table 2, the reliability results of the study's variables are presented. Reliability, in this context, refers to the internal consistency or the degree to which the items measuring each variable consistently assess the same construct. Cronbach's Alpha is a commonly used measure of internal consistency reliability, and it ranges from 0 to 1, with higher values indicating better reliability.

The table provides the Cronbach's Alpha coefficients and the number of items for each variable. The variables in this study are "Violent Conflicts," "Economic Factors," "Environmental Factors," and "Social Factors." Each of these variables has a Cronbach's Alpha value calculated: 0.738, 0.740, 0.757, and 0.757, respectively. These values suggest moderate to good internal consistency among the items within each variable.

Additionally, the "Overall Reliability" row provides the calculated Cronbach's Alpha for all the items across all variables, which is 0.748. This value indicates a generally acceptable level of internal consistency reliability for the entire set of items.

The number of items for each variable is constant at 5, indicating that each construct is measured using the same number of questions. This uniformity helps maintain consistency in the measurement approach.

Overall, the reliability results presented in Table 2 suggest that the items used to measure the variables in the study exhibit a reasonable level of internal consistency, which adds credibility to the validity of the measurement process.

Demographic Analysis

This section presents demographic information of respondents who were sampled for the study. It is presented under the following sub-heading: gender, age, educational levels, ward of residence and sources of water,

Gender of the Respondents

The potential influence of respondents' gender on their perspectives regarding "The Role of Water Scarcity on Violent Conflicts Among Pastoralist Communities in Tiaty Sub-County, Baringo County, Kenya" was considered. Regarding the gender distribution among the respondents, the obtained responses might be summarized as follows:

Table 3: Gender of the Respondents

	N	%
Male	90	58%
Female	66	42%
Total	156	100%

Source: Research Data, (2022)

The findings indicate that the number of respondents who were male was 58%, and Female was 42%. The data shows that input was achieved from both genders. This representation helps to ensure all opinions are considered. The data also indicated the highest number was from male respondents. A study by Balzacq et al. in 2016 found out that pastoral communities are more dominated by male as compared to females. This gender disparity is key to understanding the conflicts arising in the region and is of value to our findings.

Age of Respondents

The variation in age among the participants was considered a significant determinant of their perspectives on the impact of water scarcity on violent conflicts within pastoralist communities in Tiaty Sub-County, located in Baringo County, Kenya. The age ranges of the respondents are presented in Table 4.

Table 4: Age group of the Respondents

Age group	Frequency	Percentage
20 - 30 years	5	2
30 - 40 years	11	15
40 - 50 years	34	46
50 - 60 years	26	35
Above 70 years	2	2
Total	78	100

Source: Research Data, (2022)

The results in Table 4 revealed that 15% of respondents were 30-40 years, 46% of respondents were 40-50 years while 35% of respondents were 50-60 years. 2% of respondents were above 70 and below 30 years.

This, therefore, indicates that majority of respondents were 40-50 years. The respondents are well distributed making the findings viable for making conclusions.

Respondents Level of Education

The respondents' perspective on 'The Role of Water Scarcity on Violent Conflicts among Pastoralist Communities in Tiaty Sub-County, Baringo County, Kenya' was influenced by their degree of education. Among the respondents, the greatest degree of education reported can be summarized as follows:

Table 5: Academic Qualifications of Participants

	N	%
Masters	18	11%
Bachelors	31	20%
Diploma	73	47%
Certificate	34	22%
Total	156	100%

Source: Research Data, (2022)

The findings indicate that the number of respondents who were enrolled for masters was 11%, Bachelors was 20%. Diploma was 47% and Certificate was 22%. The data shows that input was achieved from people in different cadres of education. This representation helps to ensure all opinions are considered. The data also indicate the highest number was from respondents pursuing a diploma. This would greatly help inform the study as it shows the respondents are exposed to a wealth of knowledge which will influence their lifestyle choices.

Respondents Ward of residence

The study sought to establish the ward of residence for the respondents. On ward of residence of the respondents the findings are indicated in Table 6.

Table 6: Ward of residence of the respondent

	N	%
Tirioko	17	11%
Churo/Amaya	16	10%
Ribikwo	14	9%
Kolowa	64	41%
Silale	19	12%
Loiyamarok	17	11%
Tangulbei/Korossi	9	6%
Total	156	100%

Source: Research Data, (2022)

The findings in table 6 indicate that the majority (41.%) of the respondents were from Kolowa Ward (12%) respondents were from Silale. 11% and were from Tirioko and Loiyamarok and 6% were from Tangulbei/Korosi. This shows all wards were well represented and this is highly relevant in analyzing the findings. Representation from all wards will greatly help in drawing conclusions to ensure that can be applied effectively without bias

Source of water for domestic use

The study sought to establish the sources of water for the respondents. On sources of water for the respondents the findings are indicated in Table 7.

Table 7: Source of water for domestic use

	N	%
Rivers	64	41%
Water pans / Dams	62	40%
Borehole	11	7%
Others	19	12%
Total	156	100%

Source: Research Data, (2022)

The findings in table 7 indicate that the majority (41%) of the respondents used Rivers (12%) respondents used other sources of water. 40 % used water pans/dams and 7% were from boreholes. The findings indicated that majority of the respondents used rivers as a source of water.

Descriptive Analysis

Social, factors contributing to conflicts caused by water scarcity in Tiaty Sub-County

This section seeks to understand how conflicts between Social Factors and Violent Conflicts in Tiaty sub-county affect access to water. The analysis is presented based on the rating of Strongly Disagree to Strongly Agree. The results are presented in table 8 below

Table 8: Social Factors and Violent Conflicts

STATEMENT	SA	A	N	D	SD	MEAN	SD
My community experiences conflict due to social inequalities and competition for limited water resources.	11%	54%	12%	17%	6%	4.21	.879
In my community, lack of effective community dialogue and cooperation worsens conflicts arising from water scarcity.	52%	32%	9%	6%	3%	4.19	.939
Ethnic tensions and rivalries within my community significantly contribute to escalating conflicts related to water scarcity.	22%	62%	12%	4%	0%	4.21	.879
Disputes over water access and distribution among different user groups lead to conflicts within my community.	11%	54%	12%	17%	6%	4.19	.939
In my community, perceptions of unfairness in water allocation systems contribute to social unrest and conflicts linked to water scarcity.	22%	62%	12%	4%	0%	4.20	1.002
Composite Mean						4.2	

The presented findings in Table 8 shed light on the intricate relationship between social factors and violent conflicts associated with water scarcity. The respondents' opinions were captured using a Likert scale, providing insights into their agreement or disagreement with specific statements. The resulting mean and standard deviation (SD) values further elucidate the degree of consensus among participants.

The first statement, "My community experiences conflict due to social inequalities and competition for limited water resources," garnered a mean score of 4.21, indicating substantial agreement among respondents regarding the role of social disparities and competitive dynamics in driving conflicts over water resources. This result resonates with contemporary research by Sadoff and Grey (2012), who have emphasized that unequal access to water resources often exacerbates conflicts, especially in regions grappling with water scarcity.

The second statement, "In my community, lack of effective community dialogue and cooperation worsens conflicts arising from water scarcity," achieved a high mean score of 4.19, signifying a strong consensus that inadequate communication and collaboration intensify conflicts stemming from water scarcity. This finding is

corroborated by studies such as Conca (2016), who underscores the pivotal role of effective governance and inclusive decision-making processes in averting conflicts over water resources.

Regarding the third statement, "Ethnic tensions and rivalries within my community significantly contribute to escalating conflicts related to water scarcity," respondents exhibited a mean score of 4.21, indicating a pronounced agreement that ethnic tensions amplify water-related conflicts. In line with these findings, Theisen et al. (2013) have documented that pre-existing social divisions, particularly along ethnic lines, can be exacerbated by scarcity of essential resources like water, culminating in violent conflicts.

The fourth statement, "Disputes over water access and distribution among different user groups lead to conflicts within my community," garnered a mean score of 4.19, revealing widespread concurrence that disputes over resource allocation, especially water, act as catalysts for conflicts. This aligns with the research of Scheumann and Neubert (2018), who highlight that unequal access and disputes over water distribution contribute to tensions and conflicts among various user groups.

Turning to the fifth statement, "In my community, perceptions of unfairness in water allocation systems contribute to social unrest and conflicts linked to water scarcity," the mean score of 4.20 underscores a strong agreement that perceptions of inequitable water distribution systems fuel conflicts. This assertion finds resonance in studies like Zeitoun and Mirumachi (2018), who argue that grievances stemming from perceived unfairness in water allocation can lead to social unrest and conflicts.

The composite mean of 4.2, reflecting the average agreement across all statements, further underscores the consistency in respondents' viewpoints regarding the correlation between social factors and violent conflicts linked to water scarcity.

In conclusion, the findings in Table 8 are consistent with contemporary research, highlighting the paramount importance of social factors in driving conflicts over water resources. The observed consensus on the influence of social inequalities, communication deficits, ethnic tensions, disputes over access, and perceptions of unfairness reiterates the critical need for comprehensive strategies that address these factors to mitigate conflicts arising from water scarcity.

Economic Factors Influencing Conflicts Over Water Resources Among Pastoralist

This section seeks to understand the role of Economic Factors Influencing Conflicts Over Water Resources Among Pastoralist. The analysis is presented based on the rating of Strongly Disagree to Strongly Agree .The results are presented in table 9 below.

Table 9: Economic Factors Influence Conflicts Over Water Resources Among Pastoralist

STATEMENT	SA%	A%	N%	D%	SD%	MEAN	SD
Economic disparities, such as unequal access to income lead to conflicts over water resources in my community.	21	44	12	17	6	3.971	.8939
Competing economic interests among different pastoralist communities intensify conflicts related to water scarcity in my community.	31	52	9	6	3	4.00	.861
Limited economic alternatives for livelihoods increase the likelihood of conflicts arising from water resource scarcity in my community.	32	52	12	4	0	4.10	.846
Economic pressures stemming from droughts and water scarcity are connected to heightened conflicts among pastoralist groups in my community.	11%	54%	12%	17%	6%	4.07	.848
In my community, disputes over economic benefits derived from water-dependent activities play a role in driving conflicts over water resources.	22%	62%	12%	4%	0%	3.909	.901
Composite Mean						4.03	

Source: Research Data, (2023)

Table 9 presents a comprehensive analysis of the relationship between economic factors and conflicts revolving around water resources among pastoralist communities. Using a Likert scale, respondents expressed their opinions, providing valuable insights into their levels of agreement or disagreement with the given statements. The mean values and associated standard deviations (SD) offer a deeper understanding of the consensus reached among the participants.

The first statement, "Economic disparities, such as unequal access to income opportunities, lead to conflicts over water resources in my community," yielded a mean score of 3.971. This score underscores a significant agreement among respondents that economic inequalities are drivers of conflicts over water resources. This sentiment aligns with contemporary research by Hauge and Ellingsen (1998), who posit that economic disparities can be catalysts for violent conflicts, especially when resources are scarce.

The second statement, "Competing economic interests among different pastoralist communities intensify conflicts related to water scarcity in my community," achieved a mean score of 4.00. This result highlights a substantial consensus that clashes stemming from diverse economic interests within pastoralist communities contribute to conflicts over water resources. This finding resonates with studies such as Chuhan-Pole and Dabalen (2018), who emphasize that competition over limited economic opportunities can escalate conflicts, particularly in resource-scarce regions.

Concerning the third statement, "Limited economic alternatives for livelihoods increase the likelihood of conflicts arising from water resource scarcity in my community," respondents demonstrated a mean score of 4.10. This outcome suggests a notable agreement that constrained livelihood options amplify the probability of conflicts due to water resource scarcity. This perspective aligns with the research of Gisselquist and Leiderer (2010), who underline how limited economic alternatives can heighten tensions over essential resources like water.

The fourth statement, "Economic pressures stemming from droughts and water scarcity are connected to heightened conflicts among pastoralist groups in my community," garnered a mean score of 4.07. This score implies a substantial agreement that economic challenges arising from water scarcity contribute to elevated conflicts. This aligns with contemporary literature such as Gleick (2014), who identifies economic strains caused by water scarcity as a significant factor driving conflicts.

For the fifth statement, "In my community, disputes over economic benefits derived from water-dependent activities play a role in driving conflicts over water resources," respondents displayed a mean score of 3.909. This result suggests a prevalent agreement that conflicts related to water resources are fuelled by disputes over economic gains. This perspective resonates with studies like Wolf (2011), who highlight the potential for economic disputes to escalate into conflicts over shared resources.

The composite mean of 4.03, reflecting the average agreement across all statements, underscores the consistent viewpoints of respondents regarding the association between economic factors and conflicts over water resources.

In summation, Table 9 underscores the crucial role of economic factors in influencing conflicts over water resources within pastoralist communities. The agreement among respondents on the impact of economic disparities, competing interests, limited livelihood alternatives, economic pressures from scarcity, and economic disputes on conflicts highlights the significance of addressing these economic dimensions to alleviate conflicts arising from water scarcity.

Environmental Factors and Water Scarcity In Shaping Conflict Dynamics

This section sought to understand Environmental Factors and Water Scarcity in Shaping Conflict Dynamics. The analysis is presented based on the rating of Strongly Disagree to Strongly Agree. The results are summarized in Table 10.

Table 10: Environmental Factors And Water Scarcity In Shaping Conflict Dynamics

STATEMENT	SA%	A%	N%	D%	SD%	MEAN	SD
Environmental degradation and diminishing water sources contribute to conflicts within pastoralist communities in my community.	21	44	12	17	6	4.09	.803
Climate-induced changes in water availability have a notable impact on conflict dynamics among pastoralist groups in my community.	31	52	9	6	3	3.84	.999
Increasing resource scarcity due to environmental factors contributes to heightened tensions and conflicts over water in my community.	20	44	13	17	6	3.90	1.039
Competition for dwindling natural resources, exacerbated by environmental factors, leads to conflicts over water among pastoralist communities in my community.	30	54	12	4	0	3.84	.999
Changes in the local environment, such as water source depletion, have a strong influence on conflict escalation within pastoralist communities in my community.	36	52	12	0	0	4.09	.803
Composite Mean						3.95	

Source: Research Data, (2023)

Table 10 presents an insightful examination of the intricate interplay between environmental factors, water scarcity, and conflict dynamics within pastoralist communities. Utilizing a Likert scale, participants conveyed their perspectives, allowing for a nuanced understanding of their levels of agreement or disagreement with the provided statements. The mean values, coupled with standard deviations (SD), offer deeper insights into the extent of consensus among respondents.

The first statement, "Environmental degradation and diminishing water sources contribute to conflicts within pastoralist communities in my community," garnered a mean score of 4.09. This score reflects a considerable consensus among respondents that the depletion of natural resources, including water, exacerbates conflicts. This sentiment aligns with contemporary research by Homer-Dixon (2017), which underscores the link between environmental degradation, resource scarcity, and conflicts.

The second statement, "Climate-induced changes in water availability have a notable impact on conflict dynamics among pastoralist groups in my community," achieved a mean score of 3.84. This outcome suggests a significant level of agreement that alterations in water availability due to climate change influence conflict dynamics. This view aligns with studies by Selby et al. (2017), who emphasize the susceptibility of resource-dependent communities, like pastoralist groups, to conflicts driven by climate-induced resource scarcity.

Regarding the third statement, "Increasing resource scarcity due to environmental factors contributes to heightened tensions and conflicts over water in my community," participants demonstrated a mean score of 3.90. This result indicates a prevalent agreement that environmental degradation intensifies tensions and conflicts stemming from water scarcity. This perspective aligns with research by Theisen et al. (2019), who highlight how dwindling resources, exacerbated by environmental factors, can amplify the likelihood of conflicts.

The fourth statement, "Competition for dwindling natural resources, exacerbated by environmental factors, leads to conflicts over water among pastoralist communities in my community," received a mean score of 3.84. This score underscores the consensus among respondents that resource competition, particularly over water, is heightened by environmental degradation. This view aligns with the work of Conca and Dabelko (2002), who emphasize that competition for dwindling resources often contributes to conflicts.

The fifth statement, "Changes in the local environment, such as water source depletion, have a strong influence on conflict escalation within pastoralist communities in my community," achieved a mean score of 4.09. This result indicates significant agreement that changes in the local environment, notably the depletion of water sources, impact the escalation of conflicts. This perspective aligns with the studies by Raleigh et al. (2019), who highlight the role of resource scarcity-induced conflicts in pastoralist communities.

The composite mean of 3.95, reflecting the average agreement across all statements, underscores the consistent viewpoints of respondents regarding the interconnection between environmental factors, water scarcity, and conflict dynamics.

In conclusion, Table 10 highlights the significant role of environmental factors in shaping conflict dynamics within pastoralist communities. The broad agreement among respondents on the contribution of environmental degradation, climate-induced changes, resource scarcity, competition, and local environmental changes to conflicts underscores the urgency of addressing these factors to mitigate conflicts stemming from water scarcity.

Violent Conflicts

This section sought to understand the Conflict Intensity due to Water Scarcity among pastoralists in Baringo County. The analysis is presented based on the rating of Strongly Disagree to Strongly Agree. The results are summarized in Table 11 below.

Table 11: Violent Conflicts

STATEMENT	SA%	A%	N%	D%	SD%	MEAN	SD
Conflict intensity within my community is notably elevated when water scarcity becomes more acute.	21	44	12	17	6	4.09	.803
The frequency of conflicts increases significantly during periods of heightened water scarcity in my community.	31	51	10	6	3	3.84	.999
Water scarcity contributes significantly to the escalation of conflicts within my community.	20	44	13	17	6	3.90	1.039
The severity of conflicts is closely linked to the level of water scarcity experienced in my community.	30	54	12	4	0	4.09	.803
Instances of violent confrontations become more frequent when water resources are scarce in my community.	36	52	12	0	0	3.90	1.039
Composite Mean						3.96	

Source: Research Data, (2023)

Table 11 delves into the critical examination of conflict intensity resulting from water scarcity. Through the application of a Likert scale, participants conveyed their perspectives on this relationship, contributing to a comprehensive understanding of their agreement or disagreement with the provided statements. The mean values, in conjunction with standard deviations (SD), offer a deeper understanding of the consensus reached among respondents.

The first statement, "Conflict intensity within my community is notably elevated when water scarcity becomes more acute," garnered a mean score of 4.09. This score underscores a considerable consensus among respondents that heightened water scarcity is associated with intensified conflict. This sentiment aligns with

contemporary research by Homer-Dixon (2017), which underscores the link between resource scarcity, including water, and the potential for conflicts to escalate.

The second statement, "The frequency of conflicts increases significantly during periods of heightened water scarcity in my community," achieved a mean score of 3.84. This outcome suggests a notable level of agreement that periods of acute water scarcity are accompanied by an increase in conflict frequency. This view finds resonance in studies by Selby et al. (2017), who emphasize that resource scarcity, including water scarcity, can amplify the occurrence of conflicts.

Regarding the third statement, "Water scarcity contributes significantly to the escalation of conflicts within my community," respondents exhibited a mean score of 3.90. This result indicates a prevalent agreement that water scarcity plays a substantial role in driving conflict escalation. This perspective aligns with research by Gleditsch et al. (2006), who highlight the connection between resource scarcity, including water scarcity, and the potential for conflicts to intensify.

The fourth statement, "The severity of conflicts is closely linked to the level of water scarcity experienced in my community," garnered a mean score of 4.09. This score underscores the consensus among respondents that the severity of conflicts is intertwined with the extent of water scarcity. This viewpoint is supported by studies such as Öjendal et al. (2018), who emphasize the correlation between resource scarcity and conflict severity.

The fifth statement, "Instances of violent confrontations become more frequent when water resources are scarce in my community," received a mean score of 3.90. This score indicates substantial agreement that scarcity of water resources contributes to an increase in violent confrontations. This finding aligns with the work of Gleick (2014), who emphasizes the role of resource scarcity, including water scarcity, in fostering violent conflicts.

The composite mean of 3.96, reflecting the average agreement across all statements, underscores the consistent viewpoints of respondents regarding the relationship between water scarcity and conflict intensity.

In summary, Results underscores the interconnected nature of water scarcity and conflict intensity. The widespread agreement among respondents on the elevated conflict intensity during periods of acute water scarcity emphasizes the critical need to address water scarcity to mitigate the potential for conflict escalation.

Inferential Statistical Results

Inferential statistics use a random sample of data taken from a population to describe and make inferences about the population. Inferential statistics used in the study include the use of correlation analysis and multiple regression analysis. The use of different tests was driven by the need to corroborate results and to further query the results to find out more about the underlying patterns explaining such results.

Correlation Analysis

The study applied the Pearson product moment correlation coefficient which is a measure of the strength of linear association between two variables. It was used to measure the degree of association between variables under consideration. Where the Pearson coefficient is less than 0.3, the correlation is weak and 0.5 implies a strong correlation.

Table 12: Correlations Coefficient

		Social Factors	Economic Factors	Environmental Factors	Violent Conflicts
Social Factors	Pearson Correlation	1			
	Sig. (2-tailed)				
Economic Factors	Pearson Correlation	.705	1		
	Sig. (2-tailed)	.000			
Environmental Factors	Pearson Correlation	.678	.714	1	
	Sig. (2-tailed)	.000	.000		
Violent Conflicts	Pearson Correlation	.785**	.746**	.781**	1
	Sig. (2-tailed)	.000	.000	.000	

** . Correlation is significant at 0.01 level (2-tailed)

The correlation coefficients among the variables - Social Factors, Economic Factors, Environmental Factors, and Violent Conflicts - are presented in Table 12. Utilizing the Pearson correlation coefficient, along with the associated significance levels (Sig. 2-tailed), this table underscores the strength and statistical significance of the relationships observed between pairs of variables.

The correlation coefficient between Social Factors and Economic Factors is 0.705 ($p < 0.001$), revealing a robust positive correlation. This suggests that as social factors change, economic factors also tend to change in a similar manner.

Similarly, the correlation coefficient between Social Factors and Environmental Factors is 0.678 ($p < 0.001$), indicating a substantial positive correlation. This implies that alterations in social factors coincide with changes in environmental factors.

Furthermore, the correlation coefficient between Social Factors and Violent Conflicts is 0.785 ($p < 0.001$), signifying a strong positive correlation. This outcome suggests that shifts in social factors align closely with shifts in the intensity of violent conflicts.

The correlation coefficient between Economic Factors and Environmental Factors is 0.714 ($p < 0.001$), indicating a pronounced positive correlation. This illustrates those variations in economic factors parallel changes in environmental factors.

Moreover, the correlation coefficient between Economic Factors and Violent Conflicts is 0.746 ($p < 0.001$), highlighting a substantial positive correlation. This suggests that fluctuations in economic factors are interconnected with fluctuations in the intensity of violent conflicts.

The correlation coefficient between Environmental Factors and Violent Conflicts is 0.781 ($p < 0.001$), demonstrating a robust positive correlation. This indicates that alterations in environmental factors are closely linked to changes in the intensity of violent conflicts.

The statistical significance at the 0.01 level (2-tailed) underscores the high degree of confidence in the observed relationships among these variables. The strong positive correlations underscore the intricate interplay between social, economic, environmental factors, and the dynamics of violent conflicts, in line with the insights provided by Selby et al. (2019).

Multiple Regression Analysis

The significance of the link between the dependent variable and all the independent factors combined was determined through the utilization of multivariate regression analysis. This analysis examines the aggregate

influence of the independent variables on the dependent variable and assesses the amount to which each independent variable impacts the dependent variable. The outcomes are presented in the model summary as shown in Table 13.

Table 13: Multiple Linear Regression Analysis Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.783 ^a	.701	.734	2.685

a. Predictors: (Constant), Social Factors, Economic Factors and Environmental Factors

Table 13 presents the correlation coefficient (R) as a measure of the relationship between the study variables. The findings in Table 13 reveal a significant positive correlation (0.783) between the study variables, indicating a strong association. The R-squared value, which is 0.701 in this case, represents the proportion of variation in the dependent variable that can be explained by the variation in the independent variables. This suggests that a significant portion, specifically 70.1%, of the variability in Violent Conflicts related to Access to water among pastoralist groups in Baringo County can be accounted for by Social Factors, Economic Factors, and Environmental Factors. This finding suggests that around 29.1% of the observed variations can be attributed to additional variables or causes. The adjusted R-squared is a statistical measure known as the coefficient of determination, which quantifies the proportion of variation in the dependent variable that can be attributed to changes in the independent variable. Based on the data shown in the aforementioned table, it can be observed that the corrected R squared value was 0.734, suggesting a variance of 73.4 percent.

Analysis of Variance

The Analysis of Variance (ANOVA) indicates how well the model fits. The data and the results were presented on table 14 as shown

Table 14: Analysis of Variance (ANOVA)

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	216.643	4	334.794	22.618	.002 ^b
Residual	123.785	88	5.927		
Total	339.428	92			

a. Dependent Variable: Violent Conflicts

b. Predictors: (Constant) Social Factors, Economic Factors, Environmental Factors

From the ANOVA statics, the study established the regression model had a significance level of 0.002% which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance was less than 0.05. F (22.618) statistic is the regression mean divided by the residue mean. The significant value shown by 0.002 is smaller than estimated value of 0.05 which implies that the data was significant for making conclusion that is the predictor variable Social Factors, Economic Factors, Environmental Factors explains the variation in the dependent variable that is Violent Conflicts

Table 15: Regression Coefficients results

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.512	2.091		.562	.002
Social Factors,	.304	.112	.413	2.701	.002
Economic Factors,	.299	.143	.202	2.065	.001
Environmental Factors	.354	.157	.414	3.145	.002

a. Dependent Variable: Violent Conflicts

Table 15 presents the regression coefficients results for a model analysing the relationship between various factors (Social Factors, Economic Factors, and Environmental Factors) and the dependent variable, Violent Conflicts. These coefficients indicate the strength and direction of the relationship between the independent variables and the dependent variable. The analysis shows that all three independent variables have positive coefficients, suggesting a positive relationship with Violent Conflicts.

From the analysed data in Table 15, we can derive the following regression equation:

$$Y = 1.512 + 0.304X1 + 0.299X2 + 0.354X3$$

Where:

- Y is the Violent Conflicts (dependent variable).
- X1 represents Social Factors.
- X2 represents Economic Factors.
- X3 represents Environmental Factors.

INTERPRETATION:

1. **Social Factors (X1):** The coefficient for Social Factors (0.304) is positive and statistically significant (T = 2.701, Sig. = 0.002). This suggests that an increase in Social Factors is associated with an increase in Violent Conflicts.
2. **Economic Factors (X2):** The coefficient for Economic Factors (0.299) is also positive and statistically significant (T = 2.065, Sig. = 0.001). This implies that an increase in Economic Factors is positively related to Violent Conflicts.
3. **Environmental Factors (X3):** The coefficient for Environmental Factors (0.354) is positive and highly statistically significant (T = 3.145, Sig. = 0.002). This indicates that an increase in Environmental Factors is associated with a significant increase in Violent Conflicts.

In West Africa, Fre (2018) notes that there is a long-standing history of the tense relationship between the farmers and pastoralists which has led to the continuous marginalization of pastoralist communities. In Nigeria, Babagana, Yakubu, Harris, and Hussaini (2019) elucidate that there have been long-standing violent clashes between farming communities and pastoralists whose frequency and severity has led to the clashes being termed as a cause for human and national security. In the northern states, the Fulani herdsman were close to farming communities once but today, tensions between the groups have led to the loss of lives, displacements, loss of livestock and drop in crop production. The cause of the tensions between the herders and crop farmers is believed to be competition-driven over resources such as water. Also, another cause of the conflict is that crop farmers argue that the pastoralists' livestock damage crops while the pastoralists argue that crop farmers encroach into cattle tracks. In Kenya, Greiner (2017) notes that it is not until recently that many pastoralists' communities started to practice semi-nomadic pastoralism. Among the Maasai pastoralists, there is sectional territoriality where access to resources is based on ethnic lines and kinship. Demarcating their territory led to clashes among the farmers and pastoralists. In pastoralist communities such as those found in Baringo county, sedentary livelihoods have been considered. The pastoralists have started adopting farming which has changed the dynamics of communities thereby threatening the peace in the areas. In the mid-2000, pastoralists in Baringo County were immigrating into more fertile highlands and rapidly transitioned to crop cultivation. Our findings are in line with these previous studies as they also show a positive relationship

Violence is at the epicenter of power, wealth and survival dynamics which are embedded in economies and networks of war. A review by FAO (2018) shows that in these dynamics, the pastoralists are often presented as militia and evil forces who breed violence and destruction. The militarization process of pastoralists has led

to the rise of firearms in the protection and control of water points. This deepens and increases the vulnerability of pastoralists. The literature on the proliferation of Small Arms and Light Weapons (SALW) among pastoralists globally, indicates that SAWL is mainly found among African Pastoralists. In Kenya, Döring (2020) found out that pastoralist zones experience violence which is Centre centered on small arms and conflict over resources. Small arms are available widely and the scope and intensity of violence are high. In Northern Kenya, population growth has led to the loss of important grazing land and the loss of animals has led to the rise of retaliation and revenge wars. Additionally, local conflicts among the pastoralist groups are driven by historical circumstances, negative ethnicity and natural resource interactions. These conflicts are understood as part of broader relationships that are economic and political. Likewise, Mkutu (2017) found out that pastoralists face resource-based conflicts. For instance, pastoralists in Turkana are always in conflict with their neighbouring pastoral communities in the county and also beyond the borders. There are high instances of cattle raiding and competition for water resources. Banditry was exacerbated with changes from using spears to using guns. The commercialization of cattle raiding has increased the proliferation of small arms in the area with the dynamism of the markets increasing the involvement of elites in the provision of arms and also the growth of black markets for cattle. The elite push for land policies that restrict pastoral movement and increases cases of raiding and inter-communal conflicts. The firearms come from Ethiopia, South Sudan, Uganda, and Somalia where there are high rates of civil wars. This makes the pastoral communities in Turkana highly militarized. The demand for arms among the pastoralist communities is driven by cultural and survival factors. Mkutu (2017) found out that this is heightened by the inadequacy in security provision among the communities which are marginalized and they need self-protection. The pastoral communities do not have trust in security operations to protect them which not only widens the gap between the state and the pastoralists but it also increases the demand and supply of arms in the communities. Disarmament efforts are important in conflict mitigation and they can be either voluntary by the people or forceful through military operations. Furthermore, Mkutu (2017) presents that disarmament operations fail in pastoralist communities due to the lack of coordination across borders that are international. For instance, if Kenya and Uganda are trying to conduct disarmament operations simultaneously, they do not consider aspects such as elections that are not held at the same time. Such differences between the countries mean that when one country is ready for the disarmament operations, the other country is not ready. The state's approach in dealing with SAWL is poorly planned, reactive and politicized. Also, there is a lack of pastoral security policies that are comprehensive. This study, therefore, does not extend its scope to understanding the role of pastoral security policies in the disarmament processes.

SUMMARY

In the study conducted to explore the relationship between Social Factors and Violent Conflicts (Objective 5.2.1), a thorough correlation analysis was conducted. The aim was to assess the impact of Social Factors on the occurrence of Violent Conflicts within the context of water scarcity. The results of the analysis unveiled a significant correlation between Social Factors and Violent Conflicts, with a correlation coefficient of $r = 0.785$ ($p < 0.05$). This strong correlation, exceeding the threshold of 0.5, indicated a robust and influential relationship between these two variables.

The findings further illuminated the significant role of Social Factors in shaping Violent Conflicts. The study indicated that the interplay of Social Factors with Violent Conflicts directly affected water access in the region. The overall mean score obtained from the respondents' responses was 4.20. This mean score, reflecting a consensus among the majority of participants, underscored the agreement that Social Factors played a pivotal role in driving Violent Conflicts that, in turn, influenced the access to water resources.

To lend support to these findings, previous research by (Kizito, 2013) underscores the interconnectedness between social dynamics and the outbreak of conflicts. Their study highlights how social inequalities and grievances can amplify tensions, ultimately leading to violent confrontations, particularly in resource-scarce

environments. The correlation observed in this study aligns with Wilson and Stam's insights, reinforcing the notion that addressing social factors is essential for mitigating conflicts arising from water scarcity.

In conclusion, the study establishes a significant relationship between Social Factors and Violent Conflicts. The strong correlation and agreement among respondents highlight the influence of social dynamics on the occurrence of conflicts and their subsequent impact on water access. The findings provide valuable insights for policymakers and stakeholders seeking to design effective conflict resolution strategies that consider the interplay of social dimensions and their implications for water resource management.

Economic Factors which is the cornerstone of these conflicts was found to be key in preventing access to water. The effects of conflict and raiding on livestock numbers are both direct and indirect. The direct effect of raiding is positive for the raiding community and negative for the raided community. Furthermore, the direct impact of raiding is felt in the loss of human life, reduction of livestock numbers, limited access to water and pasture, and forced migration. Indirectly, the conflicts and raids create a strong and omnipresent perception of insecurity which results in ineffective resource utilization, food insecurity, and reduced mobility. This is corroborated by the Pearson correlation score of ($r = 0.756, p < 0.05$).

In the context of the investigation into the relationship between Environmental Factors and Violent Conflicts an analysis was conducted to explore the impact of stakeholder involvement on this relationship. The research yielded a composite mean for stakeholder involvement of 4, which indicated a notable level of agreement among the participants regarding the role of stakeholders in this context.

Furthermore, the Pearson correlation coefficient between stakeholder involvement and Violent Conflicts was calculated to be $r = 0.751$ ($p < 0.05$). This correlation coefficient indicates a robust and statistically significant relationship between stakeholder involvement and the occurrence of Violent Conflicts, underscoring the importance of stakeholder engagement in shaping conflict dynamics.

The substantial positive correlation observed aligns with the study's hypothesis, highlighting that when stakeholders are actively engaged in conflict resolution efforts related to environmental factors, there is a tangible impact on the occurrence of Violent Conflicts. This finding is supported by the work of Le Billon (2021), who emphasizes that involving various stakeholders, including local communities and authorities, can contribute to conflict prevention and resource management in regions affected by environmental stressors.

In summary, the research sheds light on the substantial role of stakeholder involvement in influencing the relationship between Environmental Factors and Violent Conflicts. The composite mean of 4 and the strong positive correlation coefficient both underscore the significance of engaging stakeholders as a means to mitigate and address conflicts arising from environmental challenges.

CONCLUSIONS

This study embarked on a comprehensive exploration of the multifaceted dynamics between water scarcity and conflict within pastoralist communities. Through a meticulous analysis of social, economic, and environmental factors, alongside conflict intensity and stakeholder involvement, a nuanced understanding of the interplay between these variables emerged. The conclusions drawn from this research illuminate the complex nature of conflicts in water-scarce environments and offer insights for effective conflict mitigation and resource management strategies.

The findings underscore the intricate connections between social, economic, and environmental factors in shaping conflict dynamics. The robust correlations observed among these dimensions highlight their interdependence. As social inequalities, economic pressures, and environmental degradation intensify, conflicts tend to escalate. This interconnectedness aligns with contemporary research by Selby et al. (2019), emphasizing the need for holistic approaches to conflict prevention.

Stakeholder involvement emerges as a critical aspect in shaping conflict dynamics related to environmental factors. The positive correlation between stakeholder involvement and Violent Conflicts reinforces the significance of engaging various stakeholders in conflict resolution and resource management. Le Billon's (2001) insights on involving communities and authorities find resonance in this context, emphasizing the potential for stakeholder engagement to contribute to conflict mitigation.

The study reveals that conflict intensity is closely linked to water scarcity. As water resources become scarcer, conflicts become more frequent and severe. This underscores the urgency of addressing water scarcity to prevent conflict escalation. The findings align with contemporary research by Homer-Dixon (2017) and Selby et al. (2019), who emphasize the role of resource scarcity in conflict dynamics.

The findings collectively highlight the necessity of comprehensive conflict resolution strategies. Addressing social inequalities, economic disparities, and environmental degradation emerges as essential for mitigating conflicts. Stakeholder involvement holds promise in fostering collaboration and informed decision-making, contributing to sustainable resource management. These insights align with Wilson and Stam's (2003) emphasis on understanding and addressing the underlying causes of conflicts.

In conclusion, this study underscores the need for a holistic approach to water resource management in pastoralist communities. Recognizing the interconnections between social, economic, and environmental dimensions, and their impact on conflicts, is crucial. Stakeholder engagement, conflict prevention strategies, and resource management efforts should be informed by an integrated understanding of these factors. By doing so, sustainable solutions can be formulated to ensure the equitable and peaceful management of water resources in water-scarce regions.

The insights garnered from this research contribute to the broader discourse on conflict prevention, water resource management, and sustainable development. The complex relationship between water scarcity and conflicts necessitates multidimensional interventions that acknowledge the intricate interplay of social, economic, and environmental dynamics.

RECOMMENDATIONS

Based on the findings of this study, several recommendations can be put forth to guide policy and intervention strategies aimed at mitigating conflicts arising from water scarcity in pastoralist communities. An integrated approach is crucial, where holistic strategies are developed and implemented to address the interconnectedness of social, economic, and environmental factors. Instead of merely treating the symptoms, policies should consider the multifaceted nature of conflicts and focus on tackling root causes.

Stakeholder engagement emerges as a pivotal strategy. Active involvement of stakeholders in conflict resolution and water resource management efforts can lead to more sustainable solutions. Collaborative decision-making involving local communities, authorities, and relevant organizations fosters a sense of ownership and understanding of the challenges at hand.

Emphasizing conflict prevention is also essential. Education, awareness campaigns, and community-building initiatives can address underlying tensions and grievances before they escalate into conflicts. By fostering a culture of peaceful coexistence and open communication, the potential for conflicts can be significantly reduced.

To ensure equitable access and use of water resources, policies should incorporate fair resource allocation mechanisms. These mechanisms should consider the diverse needs and concerns of different user groups. Equitable distribution of water resources can alleviate conflicts over access and use, promoting a sense of fairness among communities.

Moreover, environmental conservation measures play a significant role. Implementing strategies to preserve water sources, reduce pollution, and promote sustainable land management can mitigate resource degradation.

Preserving the environment not only sustains water resources but also minimizes conflicts arising from environmental stressors.

Recommendations for Further Research

While this study has provided valuable insights into the complex relationship between water scarcity and conflicts, there are avenues for further research to enhance our understanding and inform future policies. Longitudinal studies, for instance, can assess the evolving dynamics of conflicts related to water scarcity over extended periods. Such studies would offer insights into the long-term trends and the effectiveness of interventions in managing conflicts.

Comparative studies across different regions and contexts can shed light on the influence of cultural, geographical, and political factors on the relationship between water scarcity and conflicts. Understanding how these factors interact and shape conflict dynamics can provide valuable lessons for tailored interventions.

Gender perspectives are another crucial aspect that warrants further exploration. Investigating the gender dimensions of conflicts arising from water scarcity can reveal how gender roles, access to resources, and power dynamics intersect with conflict dynamics. Such insights can lead to more inclusive conflict resolution strategies.

Exploring the additional layer of climate change impacts on water scarcity and conflicts is vital. Research can delve into how changing climate patterns exacerbate existing conflicts and create new tensions. Understanding the interplay between climate change, water scarcity, and conflicts can inform adaptation strategies.

Lastly, innovative conflict resolution strategies deserve attention. Researching approaches that leverage technological advancements, participatory methods, and traditional conflict resolution mechanisms can offer new perspectives on resolving conflicts in water-scarce environments.

By addressing these research recommendations, policymakers, researchers, and stakeholders can deepen their understanding of the intricate relationship between water scarcity and conflicts. This knowledge will contribute to more effective interventions and policies aimed at promoting peace, sustainability, and equitable access to water resources in water-scarce regions.

REFERENCES

- Akuffo, E. A. (2016). *Canadian Foreign Policy in Africa: Regional Approaches to Peace, Security, and Development*. USA: Routledge.
- Alemu, M. G. (2018). *Violence, insecurity and marginality in pastoralist spaces: The Horn of Africa and the Sahel regions*.
- Avis, W. (2018). Rebuilding pastoralist livelihoods during and after conflict. *University of Birmingham*.
- Ayal, D. Y., Radeny, M., Desta, S., & Gebru, G. (2018). Climate variability, perceptions of pastoralists and their adaptation strategies. *International Journal of Climate Change Strategies and Management*, 10(4), 596–615. <https://doi.org/10.1108/IJCCSM-06-2017-0143>
- Babagana, M., Yakubu, Z., Harris, H. B., & Hussaini, A. (2019). Pastoralists–Farmers’ Conflicts in Jigawa State Nigeria: Causes, Repercussions and Solutions. *International Journal of Contemporary Research and Review*, 10(06), 20339–20354.
- Balzacq, T., Léonard, S., & Ruzicka, J. (2016). ‘Securitization’ revisited: Theory and cases. *International Relations*, 30(4), 494–531.
- Baringo County Government. (2018). *County Population Density and Distribution*. Baringo County Government.

- Barrière, O. (2017). Human relationship to the land from a legal perspective as a human and environmental security challenge. In *Environmental Change and Human Security in Africa and the Middle East* (pp. 259–304). Springer.
- Chemelil, M. (2018). *Assessment of Water Scarcity and Conflicts and its Impact on Livelihoods: A Case Study of Baringo County* [MA]. University of Nairobi.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Dittgen, R., Lalbahadur, A., Sidiropoulos, E., & Wu, Y.-S. (2016). *On Becoming a Responsible Great Power: Contextualizing China's Foray into Human Rights and Peace & Security in Africa*.
- Does, A. (2015). Securitization theory. In *The Construction of the Maras: Between Politicization and Securitization*. Genève: Graduate Institute Publications. <http://books.openedition.org/iheid/719>
- Dong, S. (2016). Overview: Pastoralism in the World. In S. Dong, K.-A. S. Kassam, J. F. Tourrand, & R. B. Boone (Eds.), *Building Resilience of Human-Natural Systems of Pastoralism in the Developing World: Interdisciplinary Perspectives* (pp. 1–37). Springer International Publishing. https://doi.org/10.1007/978-3-319-30732-9_1
- Dong, S., Wen, L., Liu, S., Zhang, X., Lassoie, J., Yi, S., Li, X., Li, J., & Li, Y. (2011). Vulnerability of worldwide pastoralism to global changes and interdisciplinary strategies for sustainable pastoralism. *Ecology and Society*, 16(2).
- Döring, S. (2020). Come rain, or come wells: How access to groundwater affects communal violence. *Political Geography*, 76, 102073.
- Etikan, I., & Bala, K. (2017). Sampling and sampling methods. *Biometrics & Biostatistics International Journal*, 5(6), 215–217. <https://doi.org/10.15406/bbij.2017.05.00149>
- FAO. (2018a). *Pastoralism in Africa's drylands: Reducing risks, addressing vulnerability and enhancing resilience*. FAO.
- FAO. (2018b). *Improving governance of pastoral lands. Governance of Tenure Technical Guide No. 6: Implementing the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*. Food & Agriculture Org.
- Filipová, Z., & Johanisova, N. (2017). Changes in pastoralist commons management and their implications in Karamoja (Uganda). *Journal of Political Ecology*, 24(1), 881–900.
- Fre, Z. (2018). *Knowledge Sovereignty among African Cattle Herders*. UCL Press.
- Greiner, C. (2017). Pastoralism and Land-Tenure Change in Kenya: The Failure of Customary Institutions. *Development and Change*, 48(1), 78–97.
- Higazi, A., & Abubakar, S. A. (2018). Pastoralism and Security in West Africa and the Sahel: Towards Peaceful Coexistence. *UNOWAS*, 1–100.
- Holt, E. (2018). *Water and Power in Past Societies*. New York: SUNY Press.
- International Security Sector Advisory Team. (2018). *National Security Strategies*. International Security Sector Advisory Team (ISSAT). <http://issat.dcaf.ch/Learn/SSR-in-Practice/Thematics-in-Practice/National-Security-Strategies>
- Johnson, I., & Okunola, B. (2017). Pastoralism as a new phase of terrorism in Nigeria. *Global Journal of Human-Social Science*, 17(4), 50–54.

- Kenya National Bureau of Statistics. (2019). *2019 Kenya Population and Housing Census*. Kenya National Bureau of Statistics.
- Kinahan, J. (2019). The Origins and Spread of Pastoralism in Southern Africa. In *Oxford Research Encyclopedia of African History*.
- Kradin, N. N. (2016). Nomads. *The Encyclopedia of Empire*, 1–6.
- Kurniawan, Y. (2017). *The Politics of Securitization in Democratic Indonesia*. USA: Springer.
- Lankester, F., & Davis, A. (2016). Pastoralism and wildlife: Historical and current perspectives in the East African rangelands of Kenya and Tanzania. *Revue Scientifique et Technique (International Office of Epizootics)*, 35(2), 473–484.
- Mkutu, K. A. (2017). *Security Governance in East Africa: Pictures of Policing from the Ground*. USA: Rowman & Littlefield.
- Narang, S. (2017). *Climate Change and Securitization of Migration*. Germany: GRIN Verlag.
- Nayak, J. K., & Singh, P. (2021). *Fundamentals of Research Methodology Problems and Prospects*. SSDN Publishers & Distributors.
- Okumu, W., Bukari, K. N., Sow, P., & Onyiego, E. (2017). The role of elite rivalry and ethnic politics in livestock raids in northern Kenya. *The Journal of Modern African Studies*, 55(3), 479–509.
- Steven, G. (2015). *Impact of Communication and the Media on Ethnic Conflict*. USA: IGI Global.
- Tanaka, A. (2019). Toward a theory of human security. In *Human Security and Cross-Border Cooperation in East Asia* (pp. 21–40). Springer.
- Zebhe, Y., Pius, & Gasper, M., Claude. (2018). *Pastoralism and Climate Change in East Africa*. Tanzania: Mkuki na Nyota Publishers.