Odessa centre | Pastoralism
Research, Policy and Practice

TYPE Review
PUBLISHED 30 September 2025
DOI 10.3389/past.2025.15245

OPEN ACCESS

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RECEIVED 09 July 2025
ACCEPTED 15 September 2025
PUBLISHED 30 September 2025

CITATION
Amoah EA, Bloomer J and Campbell T (2025) Beyond resource scarcity: developing an integrated framework for analysing farmer-herder conflicts in the Global South.
Pastoralism 15:15245.
doi: 10.3389/past.2025.15245

Beyond resource scarcity: developing an integrated framework for analysing farmer-herder conflicts in the Global South

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Farmer-herder conflicts in Africa have attracted growing concern and debate in academia, media and among policymakers, with a key focus on the apparent increase in the frequency of such clashes. Studies on farmer-herder conflicts in the sub-Saharan Africa have been a point of study for a number of decades. Different theoretical lenses have been applied, including–a political ecology framework and a human security perspective. These frameworks have been applied separately in many research settings, to study farmer-herder conflicts in the African context. Most studies tend to approach these conflicts either through an environmental security approach, emphasising resource scarcity and climate change, or from a security perspective that prioritises conflict escalation and intercommunal violence. Bridging this gap, this critical review has developed the novel HESP Framework - which stands for Human–Ecological Security and Power - linking the human security and political ecology perspectives into a coherent, multi-scalar model. This integrated framework can explain not only why farmer-herder conflicts emerge, for example, due to land tenure policies, climate stress, and elite capture but also how they affect people differently based on their social position, livelihood strategies, and access to protection or justice. This framework can provide a new and more robust approach to understanding farmer-herder conflicts.

KEYWORDS

farmer, herder, conflicts, political ecology, human security

Introduction

In recent times, farmer-herder conflicts in Africa have garnered growing concern across the various platforms such as the academia, media and policy-making circles, with a key focus on the rising and heightening frequency of such clashes (Cabot, 2017; Flintan et al., 2021). These conflicts are mainly localised, erratic and low-intensity, occurring without the participation of the central government or security authorities (Azom and

Uba-Uzoagwa, 2022). Media outlets and global governance institutions have portrayed farmer-herder conflicts using strong and sometimes panicked language, thereby increasing the perceived urgency and severity of the issue (Nassef et al., 2023). According to the African Union Commissioner for Peace and Security, farmer-herder conflicts in Africa account for more fatalities than terrorism (AU–African Union, 2018). Similarly, a *Guardian* report in 2021, highlighted that farmer-herder conflicts across West and Central Africa had resulted in over 15,000 fatalities, with approximately half of these occurring since 2018 – with Nigeria being the most affected (Akinwotu, 2021). The escalating incidence of violent conflict poses a significant threat to West Africa, particularly due to its impacts on agriculture, which supports about 65% of the labour force and contributes 32% of the region's gross domestic product (GDP) and undermines overall security (FAO, 2022; Turner, 2022).

According to Bukari et al. (2018), the relationships between farmers and herders in the past were very cordial, with farmers bartering or trading their agricultural produce to herders in exchange for livestock products. While conflicts occasionally arose, they were typically addressed at the local level via traditional dispute resolution methods overseen by community leaders or chiefs (Paalo, 2021). However, in recent years, tensions between farmers and herders have escalated into extensive and periodic violent conflicts. Various scholars - as well as both herders and farmers - have suggested numerous reasons for the intensification of these clashes (Awash, 2020; Issifu et al., 2022; Bukari, 2023). Competition for scarce natural resources, climate change and environmental degradation, weak state and institutional responses, diminishing cohabitation between pastoralism and agriculture, and cultural or ethnic divisions are all significant drivers of this conflict (Olumba et al., 2022; Nwankwo, 2024; Wennström, 2024). Furthermore, both farmers and herders argue that such conflicts are the results of natural resource scarcity, crop destruction, cattle rustling, and killings (Bukari and Kuusaana, 2018; Bello and Abdullahi, 2021).

One commonly cited explanation for the increasing farmer–herder conflicts is the adverse effects of environmental and climate change. These climatic changes have influenced the movement of pastoralists from the Sahel southwards, in pursuit of pasture, land, and water for their livestock (Otu and Impraim, 2021; Kabeta, 2023). This migration has increased competition with farming communities, over limited natural resources, thereby exacerbating conflicts between these groups (Bukari, 2017). Nevertheless, other researchers dispute that ecological or environmental factors alone fully explain the occurrence of the conflicts. They highlight the role of political dynamics, power relations comprising both state and non-state actors, as well as a complex interplay of interconnected drivers (Bassett, 1988; Scoones, 2021). Moritz (2010), for example, contends that the study of the drivers of these conflicts should include both structural and processual determinants. He further argues that they are multifaceted and cannot be fully explained by focusing solely on either structural or processual factors. According to Moritz (2010), an effective analytical framework for studying these conflicts must integrate both dimensions. Structural factors help understand the underlying triggers of conflict, while processual factors provide an insight into how these conflicts evolve and the forms they take. Hence, this complexity requires a comprehensive approach to analyse it. Turner (2004) and Bassett (1988) similarly argue that such conflicts are influenced by an interplay of political, social, and resource-related factors. Moreover, varying circumstances can shape the causes and manifestation of these conflicts. The geographical and socio-political setting in which farmer–herder conflicts occur plays a significant role in shaping their escalation, as each conflict is naturally context-dependent (Appiah-Boateng, 2020; Locke et al., 2021).

The interplay of citizenship, ethnicity, and marginalisation plays a crucial role in determining farmer-herder conflicts (Ogu, 2022; Bayala et al., 2023). Within East Africa, pastoralist communities, such as the Pokot, Samburu, and Abakuria of Kenya; the Maasai of Kenya and Tanzania; and the Toposa of South Sudan are considered indigenous. In contrast, the Fulani herders in various parts of West Africa are often regarded as outsiders, non-indigenous, or foreigners (Bukari et al., 2018). This perception normally restricts their access to land and other natural resources, including rights of ownership and use. Even in countries such as Mali, Burkina Faso, Niger, and Nigeria - where Fulani communities are fairly integrated - they are still perceived by local populations as foreigners or late arrivals, and their access to water, pasture, and land remains restricted and contested (Boakye Gyan, 2021). Countries, such as Mauritania, have adopted laws to try to assist pastoralists have access but also face challenges too from the impact of climate change and increased cross-border migration in the Senegal River valley and recent research also shows pastoralists expanding into other livelihoods in urban areas too (Ngom and Ba, 2024).

Farmer-herder conflicts in West Africa

The growing occurrence of violent conflict between farmers and herders in West Africa has attracted considerable scholarly and policy-focused attention, highlighting the multifaceted nature and urgency of the issue. These tensions, stemming from historical processes, environmental stressors, and socio-political dynamics, have intensified in the past few years, necessitating interdisciplinary research and context-specific measures (Akinyemi, 2016).

In Nigeria, farmer-herder conflicts have intensified, especially in the central states, such as Benue, where the enactment of the Open Grazing Prohibition and Ranches Establishment Law in 2017, was to restrict cattle mobility and minimise land-related tensions. Despite this, violent clashes occurred in January 2018, resulting in over 70 fatalities,

destruction of property and mass displacement of people in the area, with Fulani pastoralists blamed for these attacks on Tiv farming communities (International Crisis Group, 2018). A similar incident happened in the Nasarawa State in December 2009, when conflict between herders and farmers in Udeni-Gida community led to 32 deaths, destruction of farm lands and burning of several houses (IRIN, 2009). These events indicate how poorly coordinated legal measures, coupled with ineffective dialogue mechanisms, can worsen ethnic tensions and escalate conflict.

In March 2019, the Dogon ethnic militia in the Ogossagou village of Mali killed approximately 160 Fulani people, accusing them of associating with jihadist groups (Benjaminsen and Ba, 2021). Unlike Nigeria, where land tenure structures have played a critical role in conflict dynamics, the Malian context illustrates a complex interplay of ethnic polarisation, land disputes and extremist influence. The state's weak institutional capacity of the state to offer effective security or facilitate conflict resolution has empowered local armed groups, thereby escalating local disputes or grievances into large-scale communal violence (Bøås, 2025).

Burkina Faso shows a distinct manifestation of farmer-herder conflict, since 2020, violence has intensified particularly in the eastern and northern regions of the country. According to Krätli and Toulmin (2020), this escalation is mainly attributed to the overlapping pressures from land tenure security issues, climate change stressors, and rising insecurity associated with regional jihadist groups. Customary institutions that once played a crucial role in mediating land-use and grazing disputes have become increasingly ineffective as a result of prolonged violence and mass displacement. Consequently, local communities face limited opportunities for peaceful negotiation and effective conflict resolution (Turner et al., 2011). These country-level cases illustrate that violent farmer-herder conflicts in West Africa cannot be resolved through standardised measures.

Although, Ghana has not experienced violent conflicts as severe as those in some Sahelian countries, it continues to witness recurring and, in some cases, fatal tensions between Fulani pastoralists and local farming communities. The Agogo Municipality in the Ashanti Region has been a prominent hotspot in the country (Bukari et al., 2018). Between 2001 and 2016, violent conflicts have resulted in about 70 fatalities, mass displacement, destruction of farmlands and properties and loss of approximately 500 cattle, while more than 100 individuals including security personnel have sustained various degrees of injuries during violent clashes response operations (Agyemang, 2017; Bukari, 2017). In the Gushegu Municipality of the Northern Region, in December 2011, Konkomba, farmers carried out a planned night attack on the Fulani herders resulting in about 13 deaths, cattle rustling and burning of houses. Survivors were displaced for over 3 months and were accommodated in the district capital under emergency shelter arrangements (Olaniyan, 2015). While the focus of this discussion centers on West Africa, the framework itself is intended to have broader applicability across the Global South. To this end, more comparative insights from other non–West African cases on farmer–herder conflicts have been incorporated, thus strengthening the analytical relevance of the framework beyond its immediate regional focus.

Developing the conceptual framework: review strategy

This study adopted a systematic-narrative review design appropriate, as it integrates the methodological transparency of structured literature searches, with the interpretive adaptability needed to merge various theoretical viewpoints (Paré and Kitsiou, 2017; Munn et al., 2018). Rather than generating an empirical analysis, this method enables the development of an integrated conceptual framework. Relevant literatures were selected through systematic searches of major academic databases such as Scopus, Web of Science, JSTOR and Google Scholar, using Boolean operators and complemented by snowball sampling from reference lists to include additional sources (Wohlin et al., 2022). Being systematic in its selection process, the review adopts a narrative mode of integration, drawing together knowledge from a range of different fields, including human security, environmental security, political ecology, institutional analysis and moral economy. This enhances a critical engagement with the dominant scarcity-based explanations of farmer-herder conflicts, while advancing a framework that highlights context-specific dynamics, local institutional arrangements and the daily experiences of the affected areas in the Global South.

Literature Review

A political ecology approach

The inception of the duo - politics and ecology - holds its own significance as it traces back to the 1970s (Watts, 1983b). During this period, various scholars, including journalist Alexander Cockburn, anthropologist Eric Wolf, and environmental scientist Grahame Beakhurst, coined the term (Wolf, 1972). In essence, political ecology (P.E) merges ecological concerns with a comprehensive construed political economy. This covers the ever-changing interplay between society and natural resources tied to the land, including the dynamics among different social classes and groups in the society (Blaikie and Brookfield, 1987).

Political ecology typically emphasises the involvement of capitalist markets and governmental powers in the processes of local displacement and environmental disturbance. Therefore, it offers a crucial alternative perspective to earlier Malthusian theories, which primarily attributed environmental deterioration

and food insecurity to the notion of increasing human populaces surpassing the sustainable utilisation of resources (Ehrlich, 1968; Hardin, 1968; Robbins, 2019). Across various settings, political ecologists consistently question: whose utilisation of, assertions to, or perspectives on the environment take precedence, and what are the reasons behind this dominance? (Robbins, 2019). However, what underpins all of these narratives is the central role of power. The significance of power within political ecology extends beyond a single level of analysis; rather, it pertains to the power dynamics between various actors at the local level, intricately connected to political and economic influences stemming from both national and international spheres (Benjaminsen and Svarstad, 2021; Robbins, 2019). Both Krätli and Toulmin (2020) and Paalo (2021) contend that conflicts between farmers and herders arise as a result of a combination of ecological and political factors rather than being solely attributed to natural resource scarcity or historical and ethnic tensions.

Political ecology studies of farmer–herder conflicts in Africa highlight the role of the state in shaping access to and control over natural resources (Benjaminsen and Ba, 2009). For example, the intensification of farmer-herder conflicts in Darfur was significantly triggered by the states interventions that weakened the customary governance structures. According to Tubiana et al. (2012), the Sudanese central government's marginalisation of the community-based dispute resolution mechanisms, such as the Native Administration, disrupted the local mechanisms for settling conflict resulting in increased tensions between the two factions. This scenario depicts how formal-informal governance tensions can worsen resource-based conflicts, highlighting the need to consider both ecological and governance factors in understanding and solving farmer-herder conflicts in the global south. Studies by Benjaminsen et al. (2009) highlight how modernisation-driven policies that confined herders to restricted areas, generated resource scarcity, fostered corruption, undermined trust in authorities and provoked violent conflicts between pastoralists and farmers in Tanzania. Similarly, Bergius et al. (2020) argue that green economy initiatives triggered the eviction of pastoral communities to accommodate commercial farming and environmental conservation, fuelling hatred and intensifying violent conflicts.

Benjaminsen and Ba (2019) found out that Fulani herders in Mali support jihadist groups because of anti-state sentiment, marginalisation, corruption and unaddressed pastoral needs, factors shaped by rent-seeking practices and inadequate development frameworks when they employed a political ecology approach to analyse farmer-herder conflict. In the context of clashes between Senufu farmers and herders in northern areas of Cote d'Ivoire, Bassett (1988) argues these disputes cannot be solely attributed to ethnic animosity, scarcity of natural resources, or losses of agricultural products. Rather, they stem from decisions made by the central government to facilitate the entry of herders into the country, with the aim of fostering the growth of the cattle industry and stimulate economic development. Also, a recent study by Otu and Sarfo (2023) revealed that in the Kwahu Afram Plains South District of Ghana, conflicts between Fulani herders and settled farmers over land, stem from the fact that the traditional leaders give their lands to the herders for huge sums of money without the knowledge of the local households. Furthermore, by employing the political ecology lens to analyse the violent Dogon-Fulani clashes in the Seeno plains of Mali, Benjaminsen and Ba (2021) reject the reductionist explanations that frame these conflicts as essentially ethnic, or attribute them exclusively to climate-induced scarcity. Instead, they demonstrate that political ecology provides a framework for examining the material politics, historical legacies, and power relations that shape such clashes including the roles of insurgency and counterinsurgency.

Despite its analytical strengths, political ecology has received considerable criticism from scholars. For example, Moritz (2010) contends that the framework applied often exaggerate structural and historical interpretations, while overlooking the daily negotiation, dispute resolution and adaptive measures applied by community stakeholders, hence obscuring local agency and adaptability. Again, Turner (2004) reveals that political ecology tends to neglect the moral and ethical dimensions of land disputes, such as notion of justice, reciprocity and legitimacy that shape the processes which resource claims are articulated and disputed. Similarly, Sultana (2021) posits that, despite its strength in challenging prevailing narratives, the framework sometimes overgeneralises across contexts without adequate empirical support, resulting in abstract conclusions that may not be applicable to diverse ecological or institutional contexts. Robbins (2004) also contends that political ecology's emphasis on power dynamics and marginalisation can result in a form of analytical determinism that is, framing all outcomes primarily in terms of domination and potentially overlooking the instances of collaboration or agreed coexistence. These criticisms imply that, despite political ecology being a valuable framework for examining the political dimensions of farmer-herder disputes, it should be complemented with context-sensitive, empirically informed approaches that consider local governance, moral economies and the daily realities of affected communities.

Climate change

Climate change is resulting in a shift in Earth's climate, identifiable through statistical tests, showing changes in its properties' average or variability, persisting for a long period, normally 30 years (IPCC, 2007). The current shift is largely driven by human activities, leading to the release of greenhouse gas emissions into the atmosphere. According to the IPCC, (2022), climate change functions as a catalyst for compounding threats exacerbating prevailing trends, tensions, and insecurity. The main issue lies in its potential to overwhelm already vulnerable populations and conflict-prone countries and

regions. It is crucial to acknowledge that the dangers extend beyond solely humanitarian concerns; it extends to political and security threats affecting both developed and developing nations particularly sub-Saharan Africa due to their limited ability to adapt (Zaidan, 2024).

Many countries across the globe are already experiencing the extreme impacts of climate change such as a reduction in arable lands and grazing fields, increased water scarcity, decreasing food and fish supplies, frequent floodings and persistent periods of drought (Godde et al., 2021). In general, the impact of changing climate is expected to escalate prevailing conflicts over scarce natural resources particularly in situations where access to these is a matter of political contention (Koubi, 2019; Folke et al., 2021). Vulnerable individuals in society facing health issues, unemployment, or social marginalisation are at greater risk from the impacts of climate change, potentially leading to increased migration within and between nations (Silchenko and Murray, 2022).

Climate change has increased the occurrence and severity of farmer-herder conflicts by transforming the availability of natural resources across various the Global South, particularly in Africa. In northern Kenya, Adano et al. (2012) and Schilling et al. (2012) observe that extended droughts and erratic rainfall patterns have reduced the availability of water and pasture for herders intensifying violent conflicts between Turkana and Pokot communities, as well as between pastoralists and farming communities in the Isiolo and Marsabit regions. Similarly, according to Bedasa and Deksisa (2024), in the Afar region of Ethiopia declining rainfall and recurrent droughts, linked to climate change, have shaped pastoral migration and often leads to violent clashes with settled farmers over irrigation water and grazing access. In the Middle Belt of Nigeria, desertification in the far north attributed to climate change has forced Fulani herders southward into areas traditionally occupied by farming communities therefore fuelling violent conflicts, particularly in the Benue and Plateau States (Abbass, 2012; Abugu et al., 2022). In Ghana, Otu and Impraim (2021) link farmer–herder violent clashes to resource competition, which is further worsened by climate change and variability, and ethnic tensions.

Land tenure security

Land holds immense significance in Africa as it serves as a basic resource for the majority of local communities, providing sustenance, grazing fields, and serving as a vital asset for both smallholders and herders upon which their livelihoods depend. Nonetheless, the matter of land in Africa is remarkably intricate and challenging (Lentz, 2013). Its intricacy stems from its ownership being multifaceted, that is not solely physical ownership (often belonging to entire communities or families) but also spiritual importance (involving ancestral ties). Moreover, it stands as the most substantial asset one can possess. Lund (2011) argues that escalating tension on land resources, the occurrence of conflicts connected to land, and the political involvement surrounding land ownership, all contribute to making land rights an essentially political concern. According to Da Rocha and Lodoh (1999), Africa exhibits distinct land tenure systems, varying significantly from one region to another, depicting the ownership, utilisation, and contracts related to lands. In the land ownership structure, individuals are required to demonstrate the absence of a likely contest to their claim, particularly from those they purchased their ownership from, having held the land for an extended period (Da Rocha and Lodoh, 1999). Sumbo (2021) contends that prior to colonialism, land accessibility and its resources were managed by families, clans, chiefs, and the broader community. The rationale was to safeguard both individuals and communal access to these resources based on customs and traditions, considering the lands as collective property. However, during the colonial period, the administration implemented land reforms based on European viewpoints on land ownership, prioritising European benefits and granting them extensive rights within the forced lawful frameworks (Kasimbazi, 2017). These tenure systems relied on the concepts of ownership (freehold) and temporary rights (leasehold). After gaining independence, governments sought to nationalise land tenure, merging traditional practices with modern through reforms. Bassett and Turner (2007) and Benjaminsen et al. (2012) argue that colonial and post-colonial land ownership structures undermined previously cooperative relationships between the two groups by introducing policies that side-lined pastoralist livelihoods and favoured sedentary farming, thereby contributing to the recurrence of these conflicts.

Land tenure security is a significant driver of farmer-herder conflicts in the Global South, particularly in a situation where formal land policies undermine traditional pastoral access to land and water resources. For example, in Ethiopia's Oromia and Afar regions, tensions have intensified due to overlapping land claims stemming from state-led land reforms, where the expansion of agricultural activities into traditional rangelands hinders pastoral movement and access to essential resources (Hagmann and Mulugeta, 2008). Galaty (2013) observed that in Kenya's Maasai land, the fragmentation of the communal grazing areas into private plots have undermined the traditional grazing systems, thereby increasing contestation between herders and farmers. In Nigeria's Middle Belt, government empowered land titling and expansion of agricultural lands into conventional grazing routes have marginalised Fulani pastoralists, contributing to violent confrontations with agrarian communities (Adebajo, 2022). The transformation of dry-season grazing lands into irrigated rice farms in the Inner Niger Delta of Mali have displaced Fulani pastoralists, hence heightening tensions and clashes with local farmers (Benjaminsen and Ba, 2009). Similarly, in Ghana's Volta Basin, the lack of formal acceptance of pastoral mobility

exposes Fulani migrants to evictions and frequent disputes with farmers over destruction of crops and access water resources (Tonah, 2006). These examples indicate that land tenure insecurity is a crucial driver of farmer-herder conflicts, as exclusionary land policies destabilise customary mediation process and escalate disputes over resources into violent confrontations.

Environmental security/scarcity

According to Dresse et al. (2019), environmental security (ES) and environmental scarcity are closely intertwined concepts. Daoudy (2020) argues that environmental security is typically associated with crises in the human environment and stands in contrast to environmental insecurity. Daoudy (2020) continues to delineate that environmental scarcity is the susceptibility of communities and individuals to suffer severe negative impacts triggered either directly or indirectly by changes in the environment. The term environmental change is frequently used to broadly describe alterations in different variables of the environment such as climate and human driven activities that leads to destruction of biodiversity, alterations in land use, desertification and land/environmental degradation (Arneth et al., 2020; Muluneh, 2021). These changes are caused by either natural processes or anthropogenic activities and diminish mitigation capacity, therefore leading to global environmental insecurity (IPCC, 2022).

According to Mkutu (2001), violent conflict between Turkana, Pokot and Samburu communities are often attributed to contestation over pasture and water in the face of irregular rainfall pattern and declining rangelands. Drought cycles in Marsabit and Isiolo districts further worsen the tensions between herders and farmers, often resulting in violent raids and reprisal attacks (Adano et al., 2012). In Ethiopia's Afar and Somali regions, disputes between pastoralists and farmers are also linked to ecological pressures, where restricted access to water sources and grazing areas during dry seasons leads to armed confrontations (Gray et al., 2003). Similar dynamics are also reported in the Karamoja region of Uganda and in South Sudan where herders movement during drought seasons intensify tensions with farming communities (UNEP, 2015; Wennström, 2024).

In the Mopti region of Mali, recurrent droughts and the encroachment of farmland into traditional dry-season grazing pasturelands has led to contestation between Dogon farmers and Fulani pastoralists over the years (Benjaminsen and Ba, 2009). Similarly, in the Middle Belt of Nigeria particularly in the Benue, Plateau and Nasarawa States, conflicts between farmers and Fulani herders are aggravated by diminishing grazing fields, desertification in northern regions and the migration of herders into highly populated agrarian areas (Abbass, 2012; Okoli and Atelhe, 2014). In the Volta Basin of Ghana, the migration of Fulani pastoralists into farming communities has triggered recurring conflicts over crop destruction and water access, highlighting the scarcity of land and pasture resources (Tonah, 2006).

Again, Homer-Dixon (2010) and Folke et al. (2021) revealed that environmental scarcity places stress on the essentials for individuals' survival, and when intertwined with societal issues like ethnic divisions, marginalisation, and inequality, it can escalate into violent conflicts. The situation in Darfur is frequently referenced as a prime example of how environmental and resource scarcity can spark such violence. The UNEP (2007) contends that there exists a significant connection between land deterioration, desertification, and conflict in Darfur. They continue to assert that the environment played a role in sparking the conflict, which was then perpetuated by cultural background and political influences.

Proponents of the environmental scarcity theory connect declining availability of natural resources (land, water, pasture, soil and food) with violent conflict are often criticised for being unsupported by solid evidence and overly theoretical (Hauge and Ellingsen, 1998; Warner, 2023). Other scholars contend that it is the presence of easily exploitable resources, not their scarcity, that sparks conflicts. This perspective suggests that conflict arises from the greed to control these resources, as opposed to grievances due to scarcity (Valenzuela, 2020; Huebert, 2021). They assert that, as seen with conflicts among groups like herders and farmers, an abundance of resources can be a greater cause of conflict than their absence (Bavinck et al., 2014; Schellens, 2020). The presence of plentiful resources in a community draws individuals, including migrants, leading to competition and, consequently, conflict. Similarly, Greiner (2012) observed that conflicts among pastoralist communities in the East Pokot District of Kenya were influenced by the increased availability and value of resources, not by a lack of them.

Robbins (2004) contends that the idea of scarcity is repeatedly overgeneralised, ignoring the complicated social, political, and economic influences causing resources inaccessibility. He stresses that the scarcity concept tends to neglect human capacity and technological innovations that can address resource shortages. He indicates that concentrating merely on scarcity may conceal opportunities for innovation, adaptation, and strategies for managing resources that could lessen or decrease scarcity tensions. Furthermore, Robbins (2004) highlights the significance of exploring how power dynamics and discrimination alter the accessibility of resources and allocation. He further argues the inclination to assign conflicts merely to the scarcity of resources, without examining the wider socio-political settings in which these clashes occur. Generally, Robbins confronts the traditional viewpoint of environmental scarcity by calling for a more comprehensive method that will take into consideration the intricate connections that exist amongst humans, institutions, technology and the environment.

A human security approach

The concept of security is a subject of debate, indicating that its interpretation varies among individuals (Williams and McDonald, 2018). Nonetheless, a thorough examination of security studies literature, demonstrates that the meaning of security, in any specific situation or context, ultimately revolves around four fundamental components: the entity for which security is sought or referent entity (whose security?); the source of the threat (security from what or who?); the course of action for ensuring security (how should security be provided?); and the responsibility for providing security (who provides security?) Asaka (2020). Traditional and non-traditional approaches are the two defined areas of security theory.

According to Huebert (2021), traditional security theory identifies the state or nation-state as the primary entity requiring security, with violent conflicts (involving actors at various levels, including sub-national, national, and/or international) viewed as the principal threat to security.

In contrast, non-traditional security theory has surfaced as a response to the limitations found in traditional security approaches (Caballero-Anthony, 2016; Peoples and Vaughan-Williams, 2020). This branch of security has specifically developed to address the inadequacies of traditional methods, aiming to enhance adaptability to emerging threats, particularly those affecting specific demographic groups like historically sidelined communities (e.g., racialised minorities, impoverished individuals, indigenous people, women).

As traditional security approaches failed to adequately safeguard individuals, the concept of human security emerged in the 1990s, as part of the growing non-traditional security theory and practice (UNDP, 1994; Alkire, 2003; Asaka, 2018; 2020). Human security (HS) is characterised by "people-centred, comprehensive, context-specific, and prevention-oriented responses that strengthen the protection and empowerment of all people and communities" (UNGA, 2012, p.1). It serves as a more effective conceptual framework for examining the interconnected dynamics of environment, development, peace, security, and human rights (Asaka and Oluoko-Odingo, 2022).

According to Baluev et al. (2017), human security has sparked extensive deliberation and notable criticisms within the analytical framework. Supporting this, Asaka (2022) outlines two primary issues that undermine the analytical value of human security: firstly, the absence of a universally agreed-upon definition, and secondly, an unending array of security threats. Asaka (2022) further contends that a consequential outcome of making individuals the focal point of security is a substantial increase in the number of threats, posing both analytical and practical difficulties. To address this issue and enhance organisation and manageability, the 1994 UNDP *Human Development Report* presented seven categories for considering human security threats. These categories encompass food security, economic security, health security, environmental security, personal security, community security, and political security (UNDP, 1994).

In light of aforementioned details, Asaka (2020) identified three distinct interpretations of human security in existing literatures: narrow, threshold, and broad. The initial interpretation (broad human security), resembling the original UNDP framework, is comprehensive yet it still encounters challenges in terms of analytical applicability. Despite these limitations, it continues to gain prominence in policy and practice, mostly within the UN and NGO sector. The second theory, described as narrow, maintains the emphasis on individuals but confines threats to those of a violent nature. In contrast to the broader conceptualisation, this approach improves analytical utility by narrowing the scope of variables involved. However, in the process, it neglects numerous genuine human security risks, rendering it less inclusive. Finally, there is a threshold-oriented conceptualisation that evaluates and incorporates or rejects threats depending on their extremity. This theory acts as a link between the narrow and broad perspectives of human security, enhancing its analytical usefulness without overlooking severe and prevalent risks to human security. Certainly, this depends on the context and the entity conducting threat identification (Asaka, 2020).

Recent research has applied the human security framework to demonstrate that farmer-herder conflicts go beyond contestation over natural resources, posing significant threats to livelihoods, security and social cohesion (Boone, 2014; Otu et al., 2020; Ioryue, 2024). For example, Bukari and Schareika (2015) employ a human security lens to analyse farmer-herder conflicts in the Asante Akyem Agogo Municipality, Ghana, revealing that such violence not only destroys agricultural production but also weakens economic resilience and communal bonds. Their study further shows that these violent conflicts are rooted in deeper structural vulnerabilities, such as ethnic exclusion and limited capacity of local institutions to mediate disputes. Similarly, Tonah (2006) examined conflict processes in the Northern Region of Ghana, which reveals that continuous insecurity over land access and mobility rights undermines personal safety, constrains rural development opportunities and prolongs the cycles of poverty and mistrust between community members.

According to Benjaminsen and Ba (2009), critical dimensions of human security, including secure land access, cultural heritage and cross-generational livelihood stability of Fulani herders in Mali are undermined due to violent farmer-herder conflicts. They argue that such conflicts extend beyond competition over limited natural resources, instead reflecting a broader crisis of management and legitimacy within pastoral areas. Supporting this, Turner (2004) shows in his studies in Niger that pastoralist marginalisation is associated with a breakdown of traditional land tenure systems and their exclusion from national development policies, conditions that trigger insecurity and conflict. Furthermore, Moritz (2010) contends that the

increasing restrictions of herders' migration across West Africa has weakened the resilience and adaptive capacity of pastoral systems, hence intensifying tensions and minimising the chances of peaceful coexistence.

In Nigeria, McGregor (2017) employs the human security framework to study how escalating conflict between crop farmers and nomadic pastoralists resulted in mass displacement, food insecurity and the militarisation of local communities. Her findings reveal that the state's inability to offer security or facilitate conflict resolution has created a power vacuum occupied by community-based self-defence groups and series of reprisal attacks, thereby heightening fear and mistrust. Okoli and Atelhe (2014) contend that government inaction and criminalisation of Fulani herders has intensified the securitisation of the conflict, regularly worsening rather than addressing fundamental human security concerns. Buba (2021) employs the human security approach to study the impacts of farmer-herder conflicts on women and children. The findings reveal that gender specific vulnerabilities include limiting access to education, higher risk of sexual violence and loss of livelihoods are frequently neglected in conventional conflict assessments. The study emphasises the need to separate human security risks by gender and age in order to promote more inclusive and effective interventions.

Nevertheless, the human security framework has faced substantial criticism for being overly generalised, conceptually ambiguous and challenging to implement in empirical conflict studies (Paris, 2001; MacFarlane and Khong, 2006). Critics contend that by focusing on individual vulnerability, the approach can overlook structural and political drivers of farmer-herder conflicts comprising land tenure insecurity, ethnic exclusion, institutional fragility and environmental governance failures (Benjaminsen and Ba, 2009; Huggins, 2010). Additionally, framing these intrinsic political disputes mainly through a humanitarian perspective, risks depoliticising them and downplaying the significant role of state authority, legal systems, and historical grievances (Paris, 2001; Khong, 2001). While the framework continues to be valuable for understanding the human costs of violence, its application requires analytical precision and sensitivity to local contexts to avoid oversimplifying the complexities of rural conflict.

Towards a broad conceptual framework for farmer-herder conflict

The literature reviewed offers important insights into the concepts of political ecology and human security and their application in the farmer-herder conflicts. To this end both PE and HS have been used separately in many literatures to study farmer-herder conflicts in the African context (see Bassett, 1988; Turner, 2004; Benjaminsen et al., 2009; Okoli and Atelhe, 2014; Otu et al., 2020; Otu and Sarfo, 2023). Regardless of the increasing body of studies on farmer-herder conflicts in the Global south, there remains a significant gap in theoretical integration between political ecology and human security (Brottem, 2016; Adams et al., 2023).

The majority of scholars study these conflicts, either through an environmental security approach, highlighting resource scarcity and climate change (Turner, 2004; Benjaminsen et al., 2012), or through security-based approaches that focus on conflict escalation and intercommunal violence (Okumu, 2010). While these frameworks provide significant contributions, they sometimes fall short in accounting for the full intricacy of how structural power relations overlap with daily insecurities faced by persons in the affected communities (Turner, 2004; Benjaminsen and Ba, 2009). This shortcoming arises from their inclination to separate environmental or ethnic drivers without sufficiently examining the overarching political and economic structures that influence unequal access to security, mobility and resources (Watts, 2004; Kaldor, 2007).

Political ecology has long contended that environmental conflict cannot be comprehended without examining the political and economic structures that influence access to and control over natural resources (Robbins, 2012). It criticises depoliticised discourses of environmental scarcity by emphasising how historical marginalisation, state land tenure structures and market forces cause unequal resource access and ecological deterioration (Bassett, 1988; Benjaminsen and Ba, 2009). Nevertheless, political ecology has faced criticism for its strong focus on structural dynamics at the expense of human welfare and individual experiences of insecurity (Watts, 2015).

In contrast, the human security approach concentrates on safeguarding people and communities from various threats affecting their survival and human rights such as violence, displacement, food insecurity and environmental deterioration (UNDP, 1994; Kaldor, 2007). It values community empowerment and highlights the social dynamics of security, especially how factors including gender, age and social identity influence vulnerability and insecurity. However, most human security approaches continue to ignore the wider ecological and political-economic procedures, hence hindering their capacity to account for continuing and worsening insecurities in particular areas (Paris, 2001; Watts, 2004; Barnett, 2007). According to Dalby (2002), by focusing on instant threats including violence or forced migration while ignoring the structural and environmental drivers, human security frameworks may offer limited understanding of the full complexity of conflict. Turner, (2004) and Benjaminsen and Ba, (2009) argue that political ecology enhances the human security framework by tackling its inclination to downplay systemic and root drivers of vulnerability, including uneven land ownership structures, state marginalisation and imbalanced power relations.

Few or no studies have effectively combined political ecology and human security frameworks. A remarkable exception is

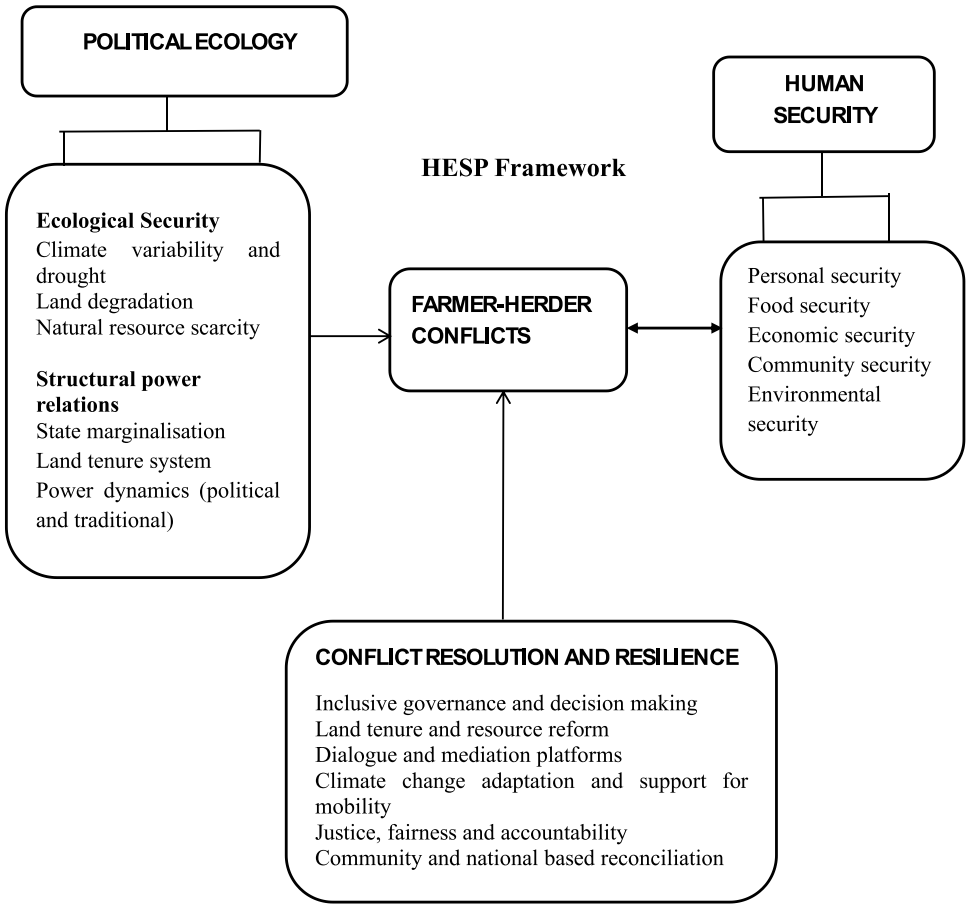

FIGURE 1
Human–ecological security and power framework; integrating political ecology and human security perspectives. Adapted by author.

Scoones et al. (2019), who propose an integrated perspective on resource conflicts that links both material and political dynamics and human-centred security. Similarly, Turner (2004) examines the strategies employed by Fulani herders to adapt to environmental stressors and political marginalisation; however, his research does not extend to a comprehensive human security approach. Addressing this gap, the authors have developed HESP Framework - which stands for Human–Ecological Security and Power - which combines human security and political ecology perspectives into a coherent, multi-scalar analytical approach (see Figure 1). From the Figure 1 below, the political ecology is categorised into ecological security factors including climate variability and drought, land degradation and resource scarcity and structural power relations such as land tenure systems and state marginalisation. These elements collectively influence landscape vulnerability and competition over scarce natural resources. The right side of the framework shows the various dimensions of human security which are often undermined in the context of conflicts, these dimensions can also shape or trigger such violent conflicts. For example, weak human security may compel individuals to migrate to different location in search of better opportunities which sometimes infringe upon or create competition or conflict with resident populations. The lower section presents key conflict resolution and resilience strategies such as inclusive governance, land reform, climate adaptation and justice mechanisms. Collectively, these components illustrate how ecological stressors and uneven power relations shape conflict, while also identifying opportunities for integrated multi-scalar interventions.

This approach enables the development of a more comprehensive analytical framework that places conflict within broader structural powers and localised human experiences of affected communities. This synthesised perspective offers insight, not only into the underlying triggers of violent farmer-herder conflicts, such as land ownership measures, climatic stress and dominance by powerful actors, but also into the unequal ways these conflicts impact individuals influenced by social identities, livelihood practices and access to

security and justice mechanisms. It transcends reductive farmer–herder dichotomies, revealing the multifaceted and overlapping dimensions of conflict and collaboration in rural Africa.

This HESP framework draws on the existing works of Schilling et al. (2012) and Moritz (2010), who implicitly or explicitly, propose a synthesised framework that integrates these perspectives. Their research illustrates that any explanation of farmer-herder conflicts needs to consider both, systemic power dynamics and environmental degradation, highlighted in political ecology, and the instant threats to human life, livelihoods and dignity stressed in human security.

Synthesis: application of the framework

Studies on farmer-herder conflicts in the sub-Saharan Africa has emerged primarily along two major lenses, the political ecology framework and human security perspective (see Hartmann, 2010; Adams et al., 2023; Bayala et al., 2023; Otu and Sarfo, 2023). The HESP framework advances the study of farmer-herder conflicts by posing questions that go beyond conventional explanatory models. A key proposition is that the coexistence of statutory and customary institutions can, under conditions of uneven power relations, intensify rather than resolve competition over land-use rights (Lund, 2008; Turner, 2004). From the ecological security perspective, climatic variability and drought-driven migration are considered to reshape the spatial dynamics of conflict, illustrating that environmental scarcity models must integrate mobility and adaptive practices (Benjaminsen et al., 2012; Raleigh and Kniveton, 2012). The human security dimension also, emphasises how farmer-herder conflicts create uneven vulnerabilities, with women and youth mostly facing disproportionate social and livelihood insecurities (McGregor, 2017). The framework also draws attention to the potential effectiveness of hybrid governance arrangements that integrate customary authority with state institutions, which may offer a more viable avenue for conflict resolution than reliance on formal mechanisms only (Cleaver, 2017; Logan, 2013). Together, these perspectives illustrate that the framework is practically relevant for Ghana, West Africa, and the wider Global South by linking conceptual debates to policy concerns and advancing testable hypotheses for both academic and practitioner communities.

By bringing together these frameworks, HESP offers a comprehensive way to explain how environmental stressors interact with institutional failures, power relations and historical marginalisation to trigger farmer-herder conflict and its impacts on various dimensions of human security. For example, it acknowledges that land-use pressures may be worsened by climate change; however, these pressures are also shaped by unequal policy measures, exclusionary development models and declining local conflict resolution mechanisms (Moritz, 2010). Rather than considering these factors in isolation, the HESP framework sees them as interconnected variables that collectively underpin each other and generate insecurities, both at the household and community levels.

Hence, the framework provides practical pathways for governance and conflict management by transforming its theoretical foundations into targeted interventions at both national and local levels. At the local level, implementing the framework requires integrating conflict-sensitive natural resource management into community and district development plans, coupled with hybrid conflict resolution strategies that combine traditional and statutory authority to augment legitimacy and accessibility. Establishing participatory land-use mapping and negotiated grazing–farming agreements can help minimise competition over resources, complemented by climate-resilient livelihood initiatives that address ecological vulnerability. At the national level, there should be establishment of cross-sectoral coordination connecting the ministries of environment, agriculture, the forestry commission, internal security, and rural development, ensuring that measures to prevent farmer–herder conflicts are systematically mainstreamed into climate adaptation strategies, land tenure reforms, and rural development policies.

Adaptation of the framework into real-world governance contexts is most effective when embedded within national climate resilience policies, post-conflict recovery programmes, and peacebuilding initiatives, guided by geospatial risk assessments that inform targeted resource allocation. By integrating human security objectives with the conceptual perspectives of political ecology, the framework serves as a strategic tool for strengthening ecological resilience, confronting structural power imbalances, and preventing the recurrence of violent conflict in fragile and transitional environments.

This analytical framework is currently being used by the author(s) to guide a doctoral research project on farmer-herder conflicts in the southern and Northern regions of Ghana.

Conclusion

Farmer-herder conflict in the Global South, particularly in the sub-Saharan Africa, has gained prominent attention across the globe due to the violent nature and high fatality rate (Krätli and Toulmin, 2020; Adams et al., 2023). Several scholars have employed various conceptual frameworks such as the environmental security theory, resource scarcity and climate change to study the issue of farmer-herder (Turner, 2004; Adano et al., 2012; Benjaminsen et al., 2012). PE and HS frameworks have been used separately by different scholars to study farmer-herder conflicts, yet despite this, no researcher has incorporated the two creating a gap in research. With the aim of

bridging this gap, we have developed a novel framework - the HESP - that integrates political ecology and human security frameworks together to study farmer-herder conflicts. Moreover, it repositions human security not only as a driver of conflict but also as a critical impact domain, emphasising the cyclical relationship between environmental injustice and human vulnerability.

The strength of this framework lies in its ability to contextualise conflict within broader socio-ecological systems, offering a holistic and interdisciplinary lens for both analysis and policy response. It encourages conflict-sensitive, inclusive, and environmentally sustainable strategies that address root causes rather than symptoms.

Author contributions

Conceptualization: EA, JB, and TC. Writing – original draft: EA. Writing – review and editing: EA, JB, and TC. Supervision: JB and TC. All authors contributed to the article and approved the submitted version.

Funding

The author(s) declare that financial support was received for the research and/or publication of this article. EA was awarded the Government of Ireland & Department of Foreign Affairs Andrew Grene Postgraduate Scholarship in Conflict Resolution & Government of Ireland Scholarship (September 2024) and received the ERASMUS Doctoral Mobility grant.

Acknowledgments

The authors wish to acknowledge the funding support provided by Irish Research Council Scholarship (Andrew Grene Postgraduate Scholarship in Conflict Resolution) and supported by the Mary Immaculate College's Research and Graduate School.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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