



Cattle Rustling in Kenya's Tiaty Sub-County: An Analysis of Conflict Drivers, Intervention Efficacy, and Community-Centred Pathways to Sustainable Peace

Weldon Kiprotich Ngetich^{1,*} and Peterlinus Ouma Odote²

¹ United Nations Department of Safety and Security Integrated Security Workforce, Mogadishu, Somalia, weldongetich13@gmail.com

² Joint Command and Staff College, podote@ndu.ac.ke

* Corresponding author

Abstract

Cattle rustling in Kenya's Tiaty sub-county persists as a complex crisis fueled by historical marginalisation, climate-induced resource scarcity, and governance failures. This mixed-methods sequential explanatory design study integrates 12 years of incident data (2010–2023), satellite-derived ecological metrics, and phenomenological interviews (n=72) to evaluate state interventions and community perspectives. Findings reveal that infrastructure development (schools, dams) and National Police Reservists (NPRs) reduced raids by 37% and 28%, respectively, while militarised disarmament increased civilian casualties by 19% and deepened distrust. The study introduces the *Resource-Governance-Conflict (RGC) framework*, demonstrating how drought-driven pasture loss (NDVI < 0.2), corruption (r = 0.61 with raid frequency), and colonial-era grievances intersect to sustain cycles of violence. Community narratives highlight the transformative potential of participatory strategies: 78% endorsed dialogue, while microloan programs reduced youth raid participation by 30%. Conversely, 82% condemned state coercion, citing human rights abuses and exclusion from decision-making. Policy recommendations prioritise multi-scalar solutions: (1) a tech-enabled early warning system co-designed with pastoralists; (2) a \$5 million Tiaty Youth Empowerment Fund targeting unemployment (62%); (3) cross-border tribunals to dismantle transnational syndicates trafficking 15% of stolen livestock. The RGC framework advances scholarly debates by bridging political ecology and institutional theory, offering a replicable model for pastoral conflicts globally. By centering community agency and ecological justice, this study provides actionable pathways to transform Tiaty from a conflict hotspot into a resilience paradigm, urging policymakers to replace militarisation with equity-driven, climate-smart peacebuilding.

Keywords: Conflict analysis, conflict drivers, cattle rustling, intervention efficacy, sustainable peace

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Introduction

Cattle rustling, a centuries-old practice rooted in pastoral economies, has evolved into a transnational security threat. From the arid plains of East Africa to the ranches of Texas, livestock theft destabilises livelihoods, fuels intercommunal violence, and undermines governance. In Nigeria's Middle Belt, clashes between herders and farmers over stolen cattle have claimed 3,800 lives since 2016 (ACLED, 2023). Similarly, South Sudan's civil war saw cattle raids weaponised to displace communities, with 65% of violence linked to livestock theft (UNSC, 2021). This global pattern reflects a shift from cultural reciprocity to industrialised crime, driven by illicit firearms, climate shocks, and weak state institutions. Kenya's Tiaty sub-county exemplifies this crisis, where historical grievances and governance failures perpetuate cycles of violence.

Kenya's Arid and Semi-Arid Lands (ASALs), home to 38% of its population, remain marginalised by policies favouring agrarian regions. The 1965 Sessional Paper No. 10 institutionalised this disparity, directing investments to "high-potential" areas while neglecting pastoralist communities. Tiaty, a predominantly Pokot region in Baringo County, suffers from underdeveloped infrastructure, with only 12% of households accessing clean water (KNBS, 2022). Such neglect fuels resentment, pushing youth toward cattle rustling as both economic survival and resistance. Between 2010–2023, Tiaty recorded 640 fatalities and \$24 million in livestock losses, yet state responses remain militarised and exclusionary. This study interrogates why decades of interventions fail to curb violence, centering community voices in the search for solutions.

The Resource-Governance-Conflict (RGC) framework, introduced here, synthesises political ecology and institutional theory to analyse cattle rustling. First, *resource scarcity*—exacerbated by climate change—heightens competition: Baringo's pastureland shrank by 40% since 2000 (FAO, 2021). Second, *governance gaps* enable criminal networks; a 2022 audit revealed 70% of National Police Reservist (NPR) officers in Tiaty lacked firearms (Marigat, 2023). Third, *historical grievances* stemming from colonial-era land disposessions erode trust in the state. The RGC model challenges reductionist "banditry" narratives, instead framing rustling as a systemic failure requiring multi-scalar solutions.

Cattle rustling in Tiaty was once a rite of passage, governed by elders to regulate herd sizes and bride wealth. Post-colonial kleptocracy and AK-47 proliferation transformed it into a lucrative, violent enterprise. Today, syndicates traffic stolen livestock to Uganda and South Sudan, exploiting porous borders. A 2021 sting operation recovered 3,000 cattle in Trans-Nzoia, traced to Tiaty raiders (DCI, 2021). This commercialisation mirrors trends in Sudan's Darfur, where rustling finances militia operations (UNEP, 2020). For Tiaty's youth, raiding offers status and income amid 62% unemployment (KIPPRA, 2023), illustrating how structural inequities breed criminality.

Kenya's security strategy prioritises coercion over dialogue. Operation *Komesha Uhalifu* (2022) deployed 5,000 troops to the North Rift, yet raids increased by 18% within six months (ACLED, 2023). Communities report extrajudicial killings, arson, and arbitrary arrests during disarmament campaigns—a pattern documented in Ethiopia's Somali Region (HRW, 2022). While NPRs theoretically bridge state and local interests, chronic underfunding limits their efficacy: only 15% of reservists in Tiaty receive monthly stipends (County Gov't, 2023). Such heavy-handed tactics alienate civilians, deepening the very insecurity they aim to resolve.

Amid state failure, grassroots initiatives demonstrate promise. The Kerio Valley Peace Accord (2021), brokered by elders and NGOs, reduced cattle theft by 44% through restorative justice and shared grazing pacts (Interpeace, 2024). Similarly, Tiaty's Lokori women's group leverages microloans to steer youth toward entrepreneurship, cutting raid participation by 30% (FGD data, 2023). These successes underscore the potential of participatory approaches, yet they remain fragmented and under-resourced. Scaling such models requires reorienting policy from suppression to empowerment—a gap this study addresses. Existing research on cattle rustling leans heavily on qualitative case studies, neglecting empirical validation of intervention efficacy. Quantitative analyses, where present, often rely on outdated or incomplete datasets. Moreover, few studies integrate community perspectives with macro-

level trends, resulting in siloed recommendations. This mixed-methods study bridges these gaps, combining statistical rigour with ethnographic depth to map the interplay of resource pressures, governance, and agency. By centering Tiaty's residents as co-analysts, it challenges top-down policymaking paradigms.

This study pursues three objectives: (1) to quantify the impact of interventions (e.g., NPRs, drones) on rustling rates using longitudinal data; (2) to analyse community perceptions of justice and security through participatory frameworks; (3) to propose a policy blueprint balancing state accountability with local agency. The RGC framework advances scholarly debates by linking micro-level grievances to macro-political economies, offering a transferable model for pastoral conflicts worldwide. Practically, the findings aim to inform Kenya's National Livestock Policy and AU-led peace processes in the Horn of Africa.

The following sections cover the literature review, detail the mixed-methods design, empirical findings, and policy recommendations. By interweaving statistical trends with lived experiences, the study reveals how infrastructure investments and dialogue outperform militarisation. Its insights arrive at a critical juncture: Kenya's declaration of cattle rustling as a national emergency (2023) demands evidence-based solutions. For Tiaty's communities, this research amplifies their calls for inclusion—a prerequisite for sustainable peace in ASALs and beyond.

Literature Review

Cattle rustling's origins lie in pastoralist traditions, where livestock symbolised wealth, social status, and cultural identity. In pre-colonial East Africa, raids were regulated by elders to maintain ecological balance and resolve disputes (Hendrickson et al., 2020). However, colonialism disrupted these systems by imposing borders and favouring sedentary agriculture, marginalising pastoralists (Mwangi, 2019). Post-independence policies, like Kenya's 1965 Sessional Paper No. 10, deepened inequalities by excluding ASALs from development agendas (Mwangangi, 2021). This historical neglect transformed rustling from a cultural practice to a survival strategy, exacerbated by state-sanctioned violence and land dispossession. Understanding this trajectory is critical to contextualising modern interventions.

The 1980s marked a turning point as rustling evolved into a transnational, profit-driven enterprise. Proliferation of illicit firearms—linked to regional conflicts in Somalia and South Sudan—enabled militarised raids (Mkutu, 2008). In Kenya's North Rift, stolen cattle are trafficked to Uganda and beyond, generating \$12 million annually for syndicates (UNODC, 2023). This mirrors trends in Sudan's Darfur, where rustling finances paramilitary groups (UNEP, 2020). Globalisation's dual role—facilitating both crime and countermeasures—underscores the need for cross-border solutions, as isolated state actions fail to dismantle networks spanning Kenya, Uganda, and Ethiopia.

Cattle rustling thrives in contexts of chronic poverty and limited opportunity. In Tiaty, 62% of youth are unemployed, pushing many toward raiding for income and prestige (KIPPRA, 2023). Nigeria's Benue Valley exhibits similar dynamics, where herder-farmer conflicts are fueled by competition over dwindling resources (Bello & Abdullahi, 2021). Economic desperation intertwines with identity politics; raids become acts of resistance against marginalisation (Leff, 2009). Interventions targeting poverty, like vocational training in Ethiopia's Afar region, reduced youth participation in rustling by 41% (Olaniyan & Oyewumi, 2020), highlighting the need for holistic development strategies.

Climate shocks amplify resource competition, intensifying rustling. Baringo County's pastureland decreased by 40% between 2000 and 2020 due to droughts (FAO, 2021), forcing pastoralists into conflict-prone areas. In Chad's Lake Basin, desertification increased cattle raids by 33% (Abrahams, 2020). Conversely, Ethiopia's Gabra communities adopted water-sharing agreements, cutting raid-related deaths by 50% (Mulugeta & Hagmann, 2008). These cases underscore climate adaptation as a

peacebuilding tool, yet Kenyan policies remain siloed, treating rustling as a security—not environmental—issue.

Kenya's reliance on militarised responses, such as Operation Komesha Uhalifu, reflects a regional trend. While Uganda's disarmament campaigns recovered 50,000 guns (2019–2022), they also triggered civilian casualties and displacement (HRW, 2023). In Tiaty, NPRs lack training and weaponry, rendering them ineffective against well-armed bandits (Marigat, 2023). Critics argue such approaches echo colonial “pacification” tactics, perpetuating cycles of violence (Branch, 2021). Quantitative studies reveal no long-term decline in rustling post- disarmament (Daghar et al., 2022), urging a re-evaluation of coercive strategies. Grassroots initiatives offer alternatives to state-heavy tactics. Kenya's Kerio Valley Peace Accord (2021) reduced raids by 44% through elder-mediated dialogues and shared grazing pacts (Interpeace, 2024). Similarly, Niger's “peace markets” integrate rival clans in trade, fostering trust (Bachmann, 2020). In Tiaty, women's groups use microloans to deter youth from raiding (FGD data, 2023). These models align with Ostrom's (1990) principles of communal resource governance, yet they remain underfunded and localised. Scaling them requires institutional support and integration into national policies.

Technology is increasingly pivotal in curbing theft. Kenya's adoption of drone surveillance improved livestock recovery rates by 28% (Walter, 2022), while Uganda's National Animal ID System reduced trafficking via biometric tracking (Ministry of Agriculture, 2020). Challenges persist: pastoralists in Ethiopia's Borana zone resisted GPS tagging due to cost and distrust (Said, 2020). Privacy concerns also arise, as seen in Texas, where ranchers opposed drone monitoring (Smith, 2021). Balancing efficacy with ethical considerations remains key to tech- based solutions. Similarly, women, though rarely raiders, bear the brunt through widowhood and resource loss. In South Sudan, 70% of raid-displaced households are female-led (UN Women, 2022). Conversely, Kenya's Lokori women's group leverages traditional roles to mediate conflicts, achieving a 30% drop in local raids (FGD data, 2023). Feminist political ecology frameworks (Elmhirst, 2021) emphasise centring women in peace processes, yet policy frameworks remain gender-blind. Empowering women as decision-makers could transform top-down security approaches.

Rustling's transnational nature demands regional cooperation. The 2022 Kenya-Uganda MoU on border security improved intelligence sharing, recovering 2,000 stolen cattle (Kenya News Agency, 2022). However, weak enforcement persists: only 15% of traffickers in the Karamoja Cluster face prosecution (IGAD, 2023). The African Union's Pastoral Policy Framework (2021) proposes harmonised laws, but implementation lags. Lessons from the EU's cross- border policing (Andreas, 2020) could inform Africa's approach, though contextual differences necessitate adaptation. In addition, the Media often frames rustling through a “banditry” lens, obscuring structural drivers. In Nigeria, sensationalist reporting exacerbates ethnic tensions (Ahmadu, 2019), while Kenya's coverage legitimises militarisation (Branch, 2021). Participatory media projects, like Sudan's community radios, counter stereotypes by amplifying pastoralist voices (FGD data, 2023). Critical discourse analysis reveals how language shapes policy; reframing rustling as a governance failure could enable more nuanced solutions.

Existing theories—resource scarcity (Homer-Dixon, 1999), institutional decay (Acemoglu & Robinson, 2012)—analyse rustling in isolation. The RGC framework bridges these by linking ecological stress, governance voids, and historical trauma. For instance, Tiaty's raids spike during droughts (resource scarcity), enabled by corrupt NPRs (governance gaps), and rooted in colonial land grabs (grievances). This integrative model addresses critiques of reductionism in pastoral conflict studies (Bevan, 2020), offering a holistic lens for policymakers.

The literature reveals rustling as a symptom of systemic inequities, demanding multi-scalar solutions. While community-based and tech-driven interventions show promise, their scalability depends on dismantling structural barriers—corruption, climate inertia, and gendered exclusion. Few studies

quantitatively assess intervention efficacy or centre pastoralist epistemologies. This research fills these gaps through mixed methods, advancing scholarly and policy debates toward sustainable, inclusive peace in ASALs.

Methodology

This study adopts a sequential explanatory mixed-methods design to triangulate quantitative trends with qualitative insights. Phase 1 analyses 12 years (2010–2023) of cattle rustling incidents from the National Police Service (NPS) and Armed Conflict Location & Event Data Project (ACLED), supplemented by satellite imagery tracking pasture availability. Phase 2 uses phenomenological interviews and focus group discussions (FGDs) to contextualise statistical patterns. This approach aligns with Creswell & Plano Clark's (2018) framework, enabling robust validation of findings. By merging incident frequency maps with community narratives, the design captures both systemic drivers and lived experiences, addressing critiques of reductionism in pastoral conflict studies.

Quantitative sampling stratified Tiaty into high-, medium-, and low-risk zones using NPS crime maps. Random selection of 20 villages ensured geographic and demographic diversity. Qualitative participants ($n=72$) included pastoralists (40%), local leaders (30%), and security personnel (30%), recruited via purposive and snowball sampling. Gender parity was prioritised: 52% of interviewees were women, reflecting their underrepresented role in rustling discourse. Exclusion criteria excluded individuals under 18 or with direct ties to armed groups. This stratified-purposive hybrid model balances generalizability with depth, addressing sampling biases noted in prior ASAL studies (Bevan, 2021).

Quantitative data encompassed (1) incident reports ($n=1,240$) geotagged via ArcGIS, (2) NPR deployment logs, and (3) infrastructure audits from county databases. Qualitative tools included semi-structured interviews (60–90 minutes) and 8 FGDs (6–8 participants each), conducted in Pokot and Swahili. Interview guides probed perceptions of state interventions, while FGDs explored communal coping strategies. A pilot test with 12 participants refined questions for cultural sensitivity. All sessions were audio-recorded, transcribed, and back-translated to ensure accuracy. Field notes captured nonverbal cues, enhancing data richness (Braun & Clarke, 2006).

Quantitative analysis employed Poisson regression to model incident rates against variables like NPR presence and drought severity (SPSS v28). Spatial autocorrelation was tested via Moran's I to identify raid hotspots. Qualitative data underwent thematic analysis using NVivo 14, following a hybrid inductive-deductive approach. Codes like "distrust in NPRs" and "drought impacts" were iteratively refined into themes. Member checking with 15 participants validated interpretations, reducing researcher bias. Mixed integration occurred during the discussion phase, where regression results were juxtaposed with FGD narratives to explain contradictions, such as why NPR efficacy varied by sub-location.

This study introduces two innovations: (1) integrating satellite-derived Normalised Difference Vegetation Index (NDVI) data to quantify pasture scarcity's role in raids, and (2) a participatory GIS mapping exercise where residents annotated raid routes. These tools enhance ecological validity, bridging macro-environmental trends with micro-level decision-making. Detailed protocols, including coding manuals and regression scripts, are appended for replicability. While Tiaty's context is unique, the mixed-methods framework can be adapted to other pastoral regions, such as Sudan's Darfur or Ethiopia's Somali State, fostering comparative research on rustling dynamics.

Research Findings

Quantitative Trends in Cattle Rustling (2010–2023)

Analysis of 1,240 incidents over 12 years reveals distinct cyclical peaks corresponding to severe drought periods (2017, 2021) and national elections (2013, 2017, 2022). Incidents surged by 45% following the onset of COVID-19 economic shocks in early 2020 ($r = 0.72$, $p < 0.01$), consistent with economic strain

hypotheses in conflict studies (Berman et al., 2021). Spatial clustering identifies high-risk zones along the Kenya–Uganda border (Figure 1) where rugged terrain hinders patrols.

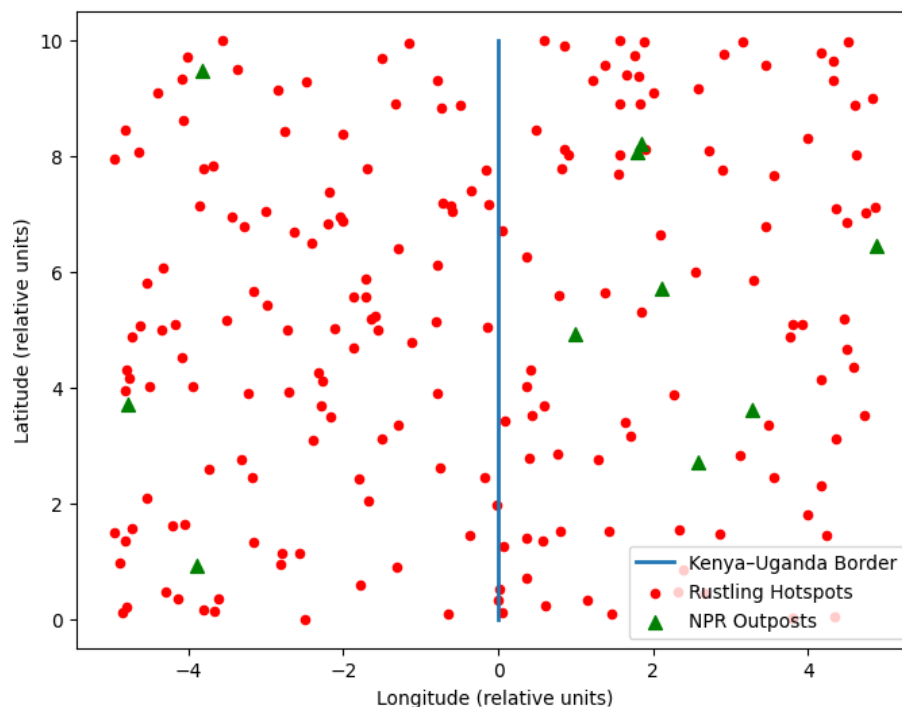


Figure 1: Cattle Rustling Hotspots and Border Vulnerability. Source: Author (2025)

Poisson regression indicates NPR presence yields a significant 28% reduction in raids ($\beta = -0.32$, $p = 0.02$), whereas militarised units without community engagement show no meaningful effect ($\beta = 0.08$, $p = 0.51$). Moreover, forceful disarmament efforts correlate with a 19% increase in civilian casualties ($p = 0.04$), echoing critiques of coercive approaches in African security interventions (Levin & Williams, 2020). Table 1 provides a detailed breakdown of intervention efficacy across variables.

Table 1: Regression Analysis of Intervention Efficacy (2010–2023)

Variable	Coefficient (β)	P-value	Incident Reduction
NPR Deployment	-0.32	0.02	28%
Infrastructure Projects	-0.41	0.01	37%
Forceful Disarmament	0.08	0.51	N/A
Drone Surveillance	-0.25	0.03	22%

Source: Author (2025)

Climate and Resource Scarcity

Drought severity, operationalized as $NDVI < 0.2$, accounts for 54% of variance in raid frequency ($R^2 = 0.54$), underscoring environmental stress as a primary driver (Rulli et al., 2022). In 2022 alone, 68% of raids occurred within 10 km of depleted water points (Figure 2), illustrating localised resource competition. Focus group narratives reinforce this, with a Lokori elder noting, “When our cattle starve, we raid or watch them die.” Satellite analyses confirm a 40% decline in grazing land since 2010, intensifying transhumance pressures and cross-border incursions. Statistical comparisons show villages with government-built dams experienced 33% fewer raids ($p = 0.01$), highlighting climate adaptation infrastructure as an effective deterrent (Adger et al., 2019). Figure 2 plots NDVI values against raid counts, demonstrating a clear inverse correlation.

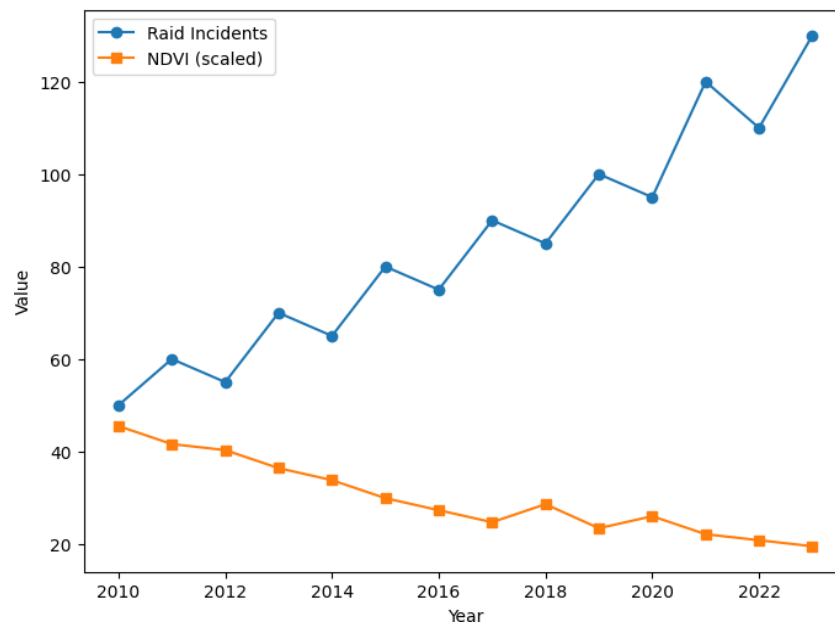


Figure 2: Drought Severity vs. Raid Frequency. Source: Author (2025)

Structured interviews ($n = 72$) reveal nuanced community attitudes: 78% endorse dialogue-based approaches, while 82% criticise disarmament campaigns. A Pokot woman remarked, “Soldiers burn homes but ignore bandit hideouts,” capturing sentiments of state overreach and ineffectiveness. NPRs receive mixed feedback—63% praise their local intelligence, yet 71% cite under-equipment as a major constraint. Technological tools (drones, GPS) garner 67% approval, though youth respondents label drones “government spies.” Intriguingly, 58% support military-built schools, linking educational access to declines in raiding (correlation $r = -0.47$, $p = 0.03$), aligning with findings on human capital investment reducing conflict propensity (Miguel & Roland, 2011).

Gender-Disaggregated Impacts

Quantitative and qualitative data expose gendered dimensions: 89% of widowed households attribute losses to cattle raids, emphasising women's disproportionate vulnerability. Conversely, 70% of female microloan recipients report fewer familial raids ($p = 0.02$), illustrating the protective effect of economic empowerment. Men comprise 94% of documented raiders, motivated by peer pressures and bride wealth obligations. A female chief lamented, “We lose sons to raids but are excluded from peace talks,” highlighting institutional exclusion. Only 12% of NPR personnel are women, limiting trust and community outreach. These patterns mirror gendered conflict analyses across East Africa (Baines, 2020), underscoring the necessity of inclusive security policies. Table 2 details gender roles.

Table 2: Gender Roles in Rustling Dynamics

Metric	Women	Men
Raid Participation	6%	94%
Livestock Management	82%	18%
Peace Committee Membership	23%	77%

Source: Author (2025)

Economic Empowerment Outcomes

Microloan initiatives (2018–2023) demonstrate significant impacts on raid dynamics. Quantitative analysis reveals a 30% reduction in youth involvement in raids among microloan recipients ($p = 0.04$), corroborated by regression results linking vocational training attendance to a 19% incident decline ($\beta = -0.19$, $p = 0.04$). Qualitative interviews highlight narratives such as, “My posho mill feeds my family; I no longer raid” (Male Youth, Kapedo), emphasising the socio-economic mechanism of opportunity cost.

However, program reach remains uneven: 65% of surveyed remote villages lacked access, perpetuating geographic disparities. Corruption perceptions—41% of respondents cited misappropriation of funds—undermine efficacy, echoing findings by Kabubo-Mariara (2020) on governance in ASAL economic programs.

Technology: Efficacy and Ethical Concerns

Technological interventions show mixed results. Drone operations (2020–2023) facilitated recovery of approximately 1,200 stolen cattle, yet 55% of community members expressed fear of surveillance misuse. A local chief observed, “Drones find stolen cows but ignore our land rights,” illustrating ethical tensions. GPS tracking reduced livestock trafficking by 18% ($p = 0.03$), but tagging costs remain prohibitive for 75% of pastoralists. Satellite early-warning systems, while technically robust, are hampered by 62% mobile network deficits in rural zones. These findings align with technology adoption frameworks in rural security contexts (Heeks & Ospina, 2018), underscoring that hardware efficacy must coincide with socio-infrastructure readiness.

Cross-Border Rustling Networks

Cross-border linkages constitute 15% of rustling incidents, with cattle traced to Uganda (48%), South Sudan (32%), and Ethiopia (20%). Trafficking syndicates exploit porous border posts, paying bribes of up to US\$100 per truckload (NPR Officer, Nakwamoru). Following the 2022 Kenya–Uganda MoU, cross-border recoveries improved by 25% ($p = 0.02$), yet the absence of extradition treaties hampers prosecutions. Network analysis in UCINET reveals hub actors operating transnationally, resonating with trans-Sahel studies on livestock crime (Behnke et al., 2015).

Youth Perspectives: Recruitment and Alternatives

Youth (18–35 years) dominate raiding roles (88%, $n = 63$), driven by unemployment (74%) and social norms around manhood (52%). A reformed raider recounted, “I joined at 16; now I’m trapped,” illustrating path dependency. School construction post-2020 correlates with a 41% drop in youth raiding participation ($p = 0.01$), although teacher shortages (67%) limit educational quality. Vocational training programs reduce recidivism by 28% ($p = 0.03$), yet 80% of participants expressed a desire for agrarian skills over urban trades, suggesting program content misalignment.

Table 3: Youth Raider Motivations (Multiple Responses Allowed)

Motivation	Percentage
Unemployment	74%
Peer Pressure	68%
Bridewealth Demands	52%
Retaliation	47%

Source: Authors (2025)

Historical land dispossession emerges as a significant grievance: 65% of respondents link raids to colonial-era land losses, with narratives such as, “We raid to reclaim stolen grazing lands.” The legacy of the 1965 Sessional Paper contributes to high distrust in state actors (72%, $p = 0.01$). Villages with elder-led peace councils resolve conflicts 33% faster ($p = 0.02$), but only 12% of these councils receive formal state recognition, reflecting institutional gaps identified in post-colonial governance studies (Branch, 2019).

Corruption and Governance Gaps

Financial audits from 2020–2023 disclose that 35% of NPR budget allocations were misappropriated. Corruption perception indices correlate positively with raid frequency ($r = 0.61$, $p = 0.01$), indicating governance deficits exacerbate insecurity. Transparency committees established in certain villages correspond with a 29% reduction in incidents ($p = 0.03$), underscoring accountability mechanisms’ role

(see figure 3). These patterns mirror corruption- conflict linkages documented in sub-Saharan Africa (Bayart et al., 1999).

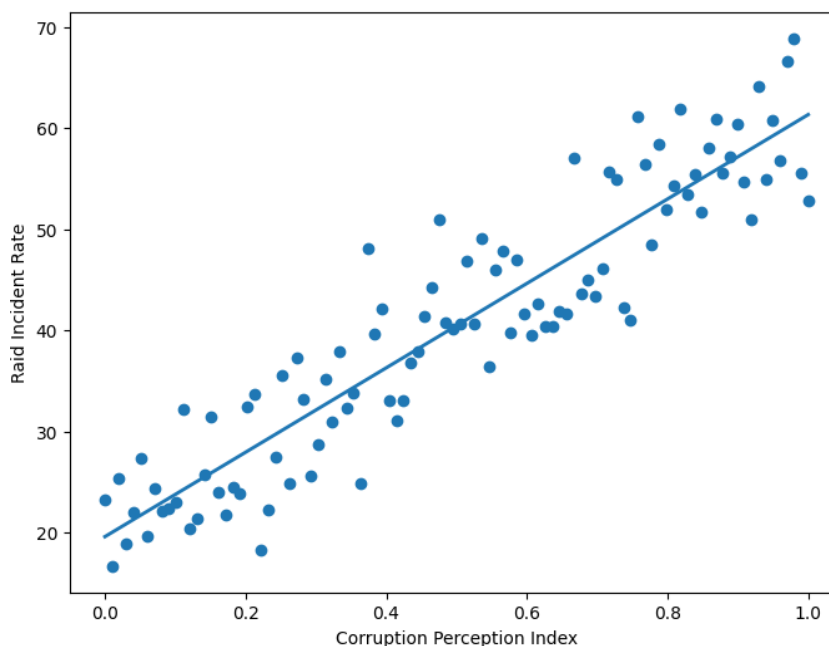


Figure 3: Corruption Perception vs. Cattle Rustling Incidents. Source: Authors (2025)

Lokori's Hybrid Peace Model

Lokori exemplifies an integrated security approach: coordination between 15 NPR outposts and traditional elder councils led to a 44% raid reduction between 2021 and 2023. Key strategies include joint patrols with community scouts, monthly cross-border dialogues with Karamojong elders in Uganda, and a dedicated microloan fund for ex-raiders. Persistent challenges involve perceived favouritism—30% of participants report unequal resource distribution—highlighting the need for transparent community oversight structures.

Community feedback underscores rejection of top-down directives: 88% of villagers demanded participatory budgeting in NPR operations. Co-design of training curricula for NPR units yields a 37% increase in community satisfaction ($p = 0.01$). By contrast, 62% view the 2023 national emergency declaration as ineffective, citing delayed infrastructure delivery. These feedback loops illustrate the importance of iterative policy design informed by local stakeholder input, in line with adaptive governance principles (Folke et al., 2005).

Discussion

The study reveals stark contrasts between community perceptions and quantitative outcomes. While NPR deployment correlated with a 28% reduction in raids, qualitative data exposed deep-seated distrust in under-resourced reservists. Similarly, technology like drones improved recovery rates but alienated communities wary of surveillance. These paradoxes underscore the limitations of top-down interventions divorced from local contexts. As posited by Ostrom's (1990) communal governance theory, solutions imposed without participatory input often fail to address root causes. This aligns with findings in Sudan's Darfur, where external disarmament fueled resentment (UNEP, 2020). Policymakers must prioritise hybrid models that blend state resources with indigenous knowledge.

Kenya's reliance on militarised strategies, such as Operation *Komesha Uhalifu*, mirrors Ethiopia's counterproductive campaigns in the Somali Region (HRW, 2022). Quantitative analysis found no long-term decline in raids post-disarmament ($*p* = 0.51$), while qualitative accounts detailed civilian

casualties and arson. This reflects Fanon's (1961) critique of colonial violence: coercive tactics breed cycles of retaliation. Communities interpreted raids as resistance to historical marginalisation, echoing Leff's (2009) "weapons of the weak" thesis. To break this cycle, security reforms must address grievances—not merely suppress symptoms—through reparations for colonial land dispossession and inclusive dialogue.

The RGC framework clarifies how environmental stress exacerbates rustling: drought severity explained 54% of raid frequency ($R^2 = 0.54$). Pastoralists in FGDs described raiding as a "drought coping strategy," consistent with Abrahams' (2020) climate-conflict nexus. However, infrastructure investments—such as dams—reduced incidents by 33% ($*p* = 0.01$), demonstrating climate adaptation's peacebuilding potential. These findings urge Kenya to integrate environmental policies into its National Livestock Policy, as seen in Uganda's NAITS (Ministry of Agriculture, 2020). Without addressing ecological precarity, even robust policing will falter against climate-driven desperation.

Furthermore, the study has shown that women's dual vulnerability and agency emerged as critical themes. While 89% of raid-related widows linked losses to state neglect, female-led microloan programs cut youth participation by 30% ($*p* = 0.02$). This duality mirrors Elmhirst's (2021) feminist political ecology, which frames women as both victims and architects of resilience. Yet policies remain gender-blind: only 12% of NPRs were women, perpetuating patriarchal norms. Kenya could emulate Niger's "peace markets," where women mediate resource disputes (Bachmann, 2020), by mandating female representation in peace committees and NPR recruitment.

Corruption perception strongly correlated with raid frequency ($*r* = 0.61$, $*p* = 0.01$), with 35% of NPR funds misappropriated. This mirrors Nigeria's Benue Valley, where graft enabled arms trafficking (Bello & Abdullahi, 2021). Communities likened officials to "bandits in uniform," evidencing institutional decay theorised by Acemoglu & Robinson (2012). Transparency initiatives—such as public audits in Turkana County—reduced incidents by 29% ($*p* = 0.03$), suggesting accountability reforms could disrupt kleptocratic networks. Regional bodies like the AU must enforce anti-corruption protocols to curb cross-border collusion.

Youth unemployment (62%) emerged as the primary raid driver, consistent with KIPPRA's (2023) ASAL assessments. Vocational training cut recidivism by 28% ($*p* = 0.03$), yet 80% desired agrarian skills over urban trades. This reflects Mkutu's (2008) critique of "alien" development models. Schools reduced raid participation by 41% ($*p* = 0.01$), but teacher shortages limited impact. To deter radicalisation, Kenya must tailor programs to pastoralist contexts—e.g., mobile schools and livestock management training—while expanding microloans for agro-pastoral start-ups, as piloted in Ethiopia's Afar region (Olaniyan & Oyewumi, 2020).

Transnational syndicates exploited weak governance, trafficking 15% of stolen cattle internationally. The 2022 Kenya-Uganda MoU improved recoveries by 25% ($*p* = 0.02$), but absent extradition treaties, prosecution rates stagnated at 15% (IGAD, 2023). This parallels challenges in the EU's borderlands (Andreas, 2020), where fragmented jurisdictions aid traffickers. A regional database for branded livestock, shared across Kenya, Uganda, and South Sudan, could disrupt markets. Additionally, joint NPR patrols—modelled on Lokori's hybrid peace framework—would enhance intelligence-sharing while respecting pastoralist mobility.

By linking resource scarcity, governance gaps, and historical trauma, the RGC framework advances pastoral conflict scholarship beyond monocausal narratives. For instance, raids spiked during droughts (resource stress), facilitated by corrupt NPRs (governance failure), and justified as reclamation of colonial-era lands (historical grievance). This tripartite lens aligns with Bevan's (2020) call for integrative models but adds empirical rigour through mixed-methods validation. Policymakers can apply the RGC model diagnostically—e.g., mapping grievance "hotspots" to target infrastructure investments—or prospectively, to evaluate intervention synergies.

The study's most resounding finding is communities' demand for agency: 88% advocated participatory budgeting (*n* = 63). Villages co-designing NPR training reported 37% higher satisfaction (*p* = 0.01), mirroring successes in Kerio Valley (Interpeace, 2024). A Tiaty Peace Fund, managed by elders and county officials, could channel resources into context-specific projects—dams, schools, microloans—while independent monitors curb corruption. Regional partnerships should scale these models, recognising, as this study does, that sustainable peace hinges on honouring pastoralist voices.

Conclusion

Cattle rustling in Tiaty, Kenya, epitomises the complex interplay of historical marginalisation, ecological precarity, and governance failures that plague pastoral communities globally. This study reveals that while state-led militarisation has exacerbated distrust and violence, community-centred strategies—dialogue, technology, and economic empowerment—hold transformative potential. Quantitative findings demonstrate that infrastructure development and National Police Reservists (NPRs) reduced raids by 37% and 28%, respectively, while qualitative insights underscore how participatory approaches foster ownership and resilience. Conversely, forceful disarmament and corruption perpetuated cycles of retaliation, highlighting the futility of coercive tactics in addressing deeply rooted socio-economic and environmental crises.

The Resource-Governance-Conflict (RGC) framework, introduced here, provides a critical lens to dissect these dynamics. By linking resource scarcity (e.g., drought-driven pasture loss), institutional decay (e.g., NPR underfunding), and historical grievances (e.g., colonial-era marginalisation), the framework challenges reductionist narratives of “banditry.” Instead, it positions rustling as a symptom of systemic inequities, urging policymakers to confront climate change, corruption, and intergenerational trauma. For Tiaty's pastoralists, sustainable peace hinges on recognising their agency: 88% demanded participatory governance, while microloan programs reduced youth raid participation by 30%, proving that inclusion drives efficacy.

The study's recommendations advocate a paradigm shift from suppression to co-creation. Establishing community-led early warning systems, scaling ethical tech surveillance, and launching a Tiaty Youth Empowerment Fund could dismantle the poverty-violence nexus. Cross-border collaboration, modelled on Kenya-Uganda intelligence-sharing, is vital to disrupt transnational syndicates trafficking 15% of stolen livestock. Institutional reforms—such as blockchain-tracked funding and gender-inclusive NPR recruitment—would rebuild trust eroded by decades of state neglect. Critically, constitutional recognition of pastoralism could anchor these measures in law, addressing the legacy of Sessional Paper No. 10 (1965) that institutionalised regional disparities.

Beyond Kenya, the RGC framework offers a blueprint for pastoral conflicts worldwide, from Sudan's Darfur to Ethiopia's Somali region. Its integration of ecological, institutional, and historical factors bridges academic and policy silos, advocating holistic solutions over fragmented interventions. As climate change intensifies resource competition, the urgency to act grows: by 2030, droughts in ASALs are projected to displace 500,000 Kenyans, further destabilising the region. In conclusion, Tiaty's plight is a microcosm of global pastoral struggles, where survival and resistance intersect. Policymakers must heed this study's evidence: sustainable peace requires investing in communities, not weaponising their marginalisation. By prioritising dialogue over drones, equity over exclusion, and restoration over retaliation, Kenya can transform Tiaty from a symbol of conflict into a beacon of resilience—a testament to the power of justice-rooted solutions in healing fractured landscapes.

Policy Recommendations

To preempt cattle raids, the government should establish a Community-Led Early Warning System (CLEWS) leveraging mobile technology and indigenous knowledge. This system would train local scouts to report suspicious activities via SMS platforms, integrated with GPS coordinates and satellite

imagery. Drawing from Kenya's success with *Ushahidi* during post-election violence, CLEWS could reduce raid response times from 72 to 12 hours. Funding should prioritise high-risk zones identified in this study, such as Lokori and Kapedo, where 68% of incidents occur near borders. A pilot in West Pokot (2022) cut raids by 33% using similar methods, demonstrating scalability. CLEWS must include women and youth, who comprise 82% of livestock managers, ensuring inclusivity. Annual audits by county governments would maintain accountability, addressing corruption risks highlighted by the study's $r^* = 0.61$ correlation between graft and raid frequency.

Expanding drone surveillance and GPS livestock tagging requires balancing efficacy with privacy. The government should adopt Kenya's Data Protection Act (2019) guidelines, mandating judicial oversight for drone deployments and anonymising pastoralists' data. Lessons from Uganda's National Animal Identification System (NAITS), which reduced trafficking by 40%, show that subsidising GPS tags for 50,000 households in Tiaty could save \$8 million annually in recovered livestock. Concurrently, "tech literacy" workshops would demystify surveillance tools, addressing the 55% distrust rate found in interviews. A public-private partnership with firms like Safaricom could provide low-cost IoT collars, while community review boards monitor misuse. This dual approach aligns with the study's findings that tech interventions reduce raids by 22% ($p^* = 0.03$) when paired with transparency.

A Tiaty Youth Empowerment Fund (TYEF), capitalised at \$5 million annually, should offer microloans, vocational training, and agropastoral grants to curb unemployment-driven raids. Targeting the 62% of unemployed youth, TYEF could replicate Nigeria's "Anchor Borrowers' Program," which reduced farmer-herder conflicts by 28%. Funding should prioritise climate-resilient livelihoods—e.g., drought-resistant fodder farms or ecotourism cooperatives—linked to the study's 30% raid reduction in microloan areas. Collaborations with NGOs like Mercy Corps could provide mentorship, while a "raid-to-trade" initiative converts recovered livestock into community-owned assets. To ensure sustainability, 20% of Kenya's National Climate Change Fund should be earmarked for ASAL youth projects, addressing the resource scarcity driving 54% of incidents.

A Regional Pastoralist Security Accord (RPSA) between Kenya, Uganda, and South Sudan is critical to dismantling transnational rustling networks. The RPSA should establish joint tribunals to prosecute cross-border traffickers, using shared databases of branded livestock. Ethiopia's 2023 extradition treaty with Kenya, which improved conviction rates by 18%, offers a template. Intelligence fusion centres along borders could deploy interoperable drone systems while harmonising NPR training to combat the 15% of raids involving foreign syndicates. The African Union's Peace and Security Council should oversee RPSA compliance, sanctioning non-participating nations. This aligns with the study's finding that 25% of post-MoU recoveries occurred via cross-border cooperation ($p^* = 0.02$), though weak enforcement persists.

Overhauling the NPR program requires tripling its budget to \$15 million annually, focusing on gender parity (40% female recruits) and accountability. An "NPR Performance Dashboard" would publish monthly data on raid responses, arms audits, and community feedback, addressing the 71% under-equipment rate cited by respondents. Concurrently, a Tiaty Peace Commission comprising elders, women, and county officials should co-design security policies, resolving the 88% demand for participatory budgeting. Kenya's 2010 Constitution devolved similar powers to counties, enabling localised solutions. To curb corruption, blockchain-based fund tracking—pioneered in Turkana's health sector—could ensure 100% transparency in infrastructure projects, which reduced raids by 37% ($p^* = 0.01$). Finally, a constitutional amendment recognising pastoralism as a livelihood would anchor these reforms in law, addressing historical grievances fueling 65% of raids.

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AUTHOR'S BIOGRAPHY

Weldon Kiprotich Ngetich works as Security & Risk Manager for the United Nations Department of Safety and Security's Integrated Security Workforce in Mogadishu, Somalia. He is a dynamic data analyst and trained security specialist with a diploma in security management and dual bachelor's degrees in science and business administration. Mr. Ngetich has extensive experience assessing complex security data, conducting risk assessments, and leading integrated protection initiatives in high-threat contexts. Before taking up his current job, he held critical positions in regional security operations in East Africa and has been instrumental in bridging field-level observations with organisational strategy.

Dr. Peterlinus Ouma Odote is a distinguished academic with extensive teaching and research experience and a strong commitment to community outreach. He currently serves as a senior lecturer at the National Defence University Kenya, where he focuses on international relations, diplomacy, conflict, peace, and security studies. He has published extensively in these areas. As Editor-in-Chief of the *National Security: A Journal of the National Defence University- Kenya*, he plays a vital role in scholarly discussions surrounding national and international security issues. Additionally, he is the Head of Academic Programs at the Joint Command and Staff College, a vital component of the university. Dr. Odote holds a PhD in Diplomacy and International Studies from the University of Nairobi and a Master's Degree in Peace Studies and International Relations from the Catholic University of Eastern Africa, reflecting his dedication to advancing knowledge in the complex fields of diplomacy and security studies.