

Gendered Vulnerability and Livelihood Dynamics in Post-Conflict Human-Wildlife Conflict: Empirical Evidence from Nwoya District, Northern Uganda

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ABSTRACT

Human–wildlife conflict (HWC) remains a critical development and environmental conservation challenge in post-conflict Northern Uganda, particularly within agrarian communities bordering Murchison Falls National Park (MFNP). While conventional conservation scholarship has predominantly emphasized ecological indices and aggregate household economic losses, limited empirical attention has been devoted to how conflict legacies, intra-household gender relations, and structural vulnerabilities shape localized experiences of wildlife incursions. Drawing on a mixed-methods study conducted in Lii Sub-county, Nwoya District, this manuscript examines the gendered implications of HWC through the analytical lens of Feminist Political Ecology (FPE), complemented by the Sustainable Livelihoods Framework (SLF). Quantitative data were collected from 105 household surveys, complemented by qualitative insights from 6 key informant interviews and 5 focus group discussions (40 participants). Findings reveal that recurrent elephant incursions systematically erode all five-livelihood capitals natural, financial, human, physical, and social through crop destruction, income loss, institutional debt, disrupted education, secondary displacement, and psychosocial distress. Crucially, these impacts are highly gender-differentiated: men face heightened physical danger through night-time crop guarding and direct confrontations with elephants, whereas women disproportionately absorb severe indirect burdens, including food insecurity, intensified unpaid care work, time poverty, emotional labour, and domestic space insecurity. Current technical mitigation measures (trenches, chilli farming, beekeeping, electric fences) are widely perceived as inadequate due to limited coverage, maintenance gaps, and weak institutional responsiveness. The study concludes that sustainable HWC mitigation requires integrated, gender-responsive governance that addresses historical displacement, land tenure insecurity, and structural exclusion.

1. Introduction

1.1 Background and Global Context of Human-Wildlife Conflict

Human–wildlife conflict (HWC) has emerged as one of the most pressing conservation, environmental governance, and rural development challenges across sub-Saharan Africa, Asia, and Latin America. In regions where protected area boundaries adjoin expanding agricultural landscapes, interactions between human populations and wild animals frequently escalate into direct confrontation (Dickman, 2010; Hoare, 2015; Nyhus, 2016). The driving forces behind intensifying HWC include human demographic growth, agricultural frontier expansion, habitat fragmentation, and climate-induced resource scarcity, contrasted with localized recoveries of protected megafauna populations (Redpath et al., 2013; Woodroffe et al., 2005). When large mammals—most notably African savanna elephants (*Loxodonta africana*) and buffaloes (*Syncerus caffer*) range outside park boundaries into surrounding farmland, rural subsistence communities suffer catastrophic losses, including crop destruction, livestock depredation, property damage, physical injuries, and loss of human life (Dickman, 2010; Hill, 2004; Naughton-Treves & Treves, 2005). Historically, wildlife conservation policies and academic assessments have approached HWC primarily through ecological, technical, or aggregate financial metrics. Studies routinely measure conflict severity in terms of total crop acreage destroyed, monetary estimates of lost yields, or the frequency of animal incursions (Hoare, 2015; MacKenzie & Ahabyona, 2012). While these quantitative parameters offer vital ecological baselines, they inadvertently obscure the underlying social structures, power relations, and institutional arrangements that determine how conflict costs are distributed across affected communities (Barua et al., 2013; Gore & Kahler, 2012). Emerging critical scholarship highlights that environmental risks and conservation burdens are neither experienced uniformly nor absorbed equally by all community members; rather, they are deeply mediated by gender, socio-economic status, land tenure security, and historical trajectories of vulnerability (Adler et al., 2025; Ochen et al., 2025; Sultana, 2020).

1.2 The Post-Conflict Context of Northern Uganda

The post-conflict landscape of Northern Uganda provides a compelling and vital socio-political context for re-examining human–wildlife dynamics. For over two decades (1986–2006), Northern Uganda was ravaged by violent conflict between the Lord’s Resistance Army (LRA) and the Government of Uganda. The insurgency resulted in massive human suffering, widespread destruction of socio-economic infrastructure, and the forced displacement of over 90% of the Acholi population into Internally

Displaced Persons (IDP) camps (Branch, 2011; Dolan, 2009). Prolonged encampment severely disrupted indigenous agricultural systems, eroded traditional land tenure institutions, depleted household capital assets, and fundamentally altered gendered labour dynamics and domestic authority structures (Branch, 2011; Kobusingye, 2017).

Following the cessation of hostilities and the gradual decongestion of IDP camps starting in 2006, displaced households embarked on mass resettlement onto their ancestral lands. However, resettlement occurred in a transformed landscape where former agricultural farmlands adjacent to protected areas had regenerated into bushland and wildlife corridors during years of human absence. Communities returning to areas neighbouring Murchison Falls National Park (MFNP) such as Lii Sub-county in Nwoya District found themselves reconstructing livelihoods directly at the conservation frontier, where recovering elephant populations frequently moved into farmland in search of forage (Adong et al., 2025; Kazibwe, 2025). Consequently, contemporary wildlife incursions in Northern Uganda are inextricably interwoven with post-war recovery challenges, land tenure contestations, structural poverty, and lingering psychosocial trauma rather than operating as isolated ecological phenomena (Ochen et al., 2025).

1.3 Statement of the Problem

Despite growing recognition that human-wildlife conflict intersects with broader socio-economic systems, limited empirical research has specifically investigated the intersection of gender, post-conflict recovery, and HWC in Northern Uganda. Conventional intervention strategies implemented by wildlife authorities and development agencies such as digging trench barriers, planting chilli fences, supporting beekeeping, and installing electric fences treat affected agricultural communities as homogenous units. They fail to account for how intra-household power relations; gendered divisions of labour, and historical legacies of displacement differentiate exposure to wildlife risks and dictate coping capacities.

Furthermore, mainstream conservation governance frameworks continue to focus heavily on visible, direct economic damages while ignoring the 'hidden impacts' of HWC such as chronic fear, time poverty, emotional labour, educational disruption among children, domestic strain, and secondary displacement (Barua et al., 2013; Gore & Kahler, 2012). To bridge this critical knowledge gap, this study examines the gendered implications of human-wildlife conflict in Lii Sub-county, Nwoya District. Specifically, the manuscript addresses four primary research issues: (1) the gendered patterns of physical exposure and risk associated with elephant incursions; (2) the impacts of HWC on gendered labour allocation, time allocation, and household food security; (3) how wildlife losses erode the five livelihood capitals within a post-conflict environment; and (4) the community perceptions of institutional conservation governance and mitigation effectiveness.

1.4 Theoretical Framework and Analytical Framing

To thoroughly analyze the complex social, economic, and political dimensions of human-wildlife conflict in Lii Sub-county, this study adopts an integrated theoretical framework combining Feminist Political Ecology (FPE) with the Sustainable Livelihoods Framework (SLF). The theoretical framework conceptualizes HWC not as a mere biological friction between people and animals, but as a deeply contextualized socio-ecological process structured by power, gender relations, resource access, and historical vulnerability.

1.4.1 Feminist Political Ecology (FPE)

Feminist Political Ecology (FPE) provides the primary analytical lens for this manuscript. Originating from the seminal work of Rocheleau, Thomas-Slayter, and Wangari (1996), FPE examines how gender interacts with class, ethnicity, age, and institutional power to shape human-environment relationships, resource control, and environmental risk exposure (Elmhirst, 2011, 2015; Nightingale, 2011). FPE departs from essentialist assumptions that treat women as naturally attuned caretakers of nature; instead, it demonstrates that gendered environmental experiences stem from socially constructed labor divisions, unequal property rights, and differential access to decision-making forums (Agarwal, 2001; Resurrección & Elmhirst, 2020).

Applied to human-wildlife conflict, FPE reveals that protected area boundaries and agricultural buffer zones are not politically neutral geographical spaces. Rather, they are socially produced arenas characterized by contested authority, unequal risk distribution, and competing resource claims (Elmhirst, 2015; Sultana, 2020). Men and women occupy distinct positions within household and rural agrarian economies: men are predominantly tasked with land clearing, cash crop production, livestock management, and physical security, whereas women bear primary responsibility for food crop cultivation, household provisioning, childcare, and reproductive care work (Doss, 2018; Gore & Kahler, 2012). Consequently, elephant incursions produce highly gender-differentiated impacts: men face direct bodily danger during crop guarding, while women shoulder severe indirect burdens, including managing severe food deficits, performing additional coping labor, and absorbing emotional distress (Adler et al., 2025; Barua et al., 2013).

1.4.2 Sustainable Livelihoods Framework (SLF)

To complement FPE's focus on power and gender relations, the study incorporates the Sustainable Livelihoods Framework (SLF) formulated by Scoones (1998) and operationalized by DFID (1999). SLF provides a systematic, structured methodology for categorizing the diverse assets upon which rural households rely to achieve livelihood security. These assets are conceptualized as five essential capitals: Natural Capital: Land, soil fertility, water resources, forests, and standing agricultural crops; Human Capital: Household labour capacity, physical health, agricultural knowledge, education, and psychological wellbeing; Financial Capital: Income, cash savings, crop sales, access to microcredit, and formal bank loans; Physical Capital: Housing structures, grain stores/granaries, farm tools, and community infrastructure; and Social Capital: Kinship networks, mutual-aid farming groups, community surveillance groups, and institutional trust.

SLF illustrates how external environmental shocks such as recurrent wildlife raids cause systemic, cross-capital erosion. For example, destruction of standing crops (Natural Capital) eliminates agricultural sales (Financial Capital), leading to food shortages and malnutrition (Human Capital), loss of granaries (Physical Capital), and strained extended family safety nets (Social Capital) (Scoones, 1998). However, SLF alone lacks the conceptual tools to explain intra-household power dynamics or why capital

accumulation and loss differ between men and women. Combining SLF with FPE resolves this limitation, allowing the analysis to trace both what assets are destroyed and who within the household bears the ultimate cost of that destruction.

2. Literature Review

2.1 *Global, Regional, and Ecological Drivers of Human-Wildlife Conflict*

Across the Global South, human–wildlife conflict represents a critical interface where environmental conservation imperatives clash directly with rural livelihood survival (Dickman, 2010; Nyhus, 2016). Ecological scholarship attributes the spatial escalation of HWC to demographic pressure, agricultural encroachment into ecological buffer zones, and habitat fragmentation, which restrict the natural movement ranges of wide-ranging megafauna (König et al., 2020; Redpath et al., 2013; Woodroffe et al., 2005). In East Africa, African savanna elephants (*Loxodonta africana*) constitute the primary crop-raiding species due to their immense body mass, high nutritional requirements, and opportunistic foraging behaviour toward high-calorie agricultural crops such as maize, rice, groundnuts, and sugarcane (Hoare, 2015; MacKenzie & Ahabyona, 2012).

However, traditional conservation biology has routinely analyzed these interactions through a narrow techno-ecological framing. Studies predominantly focus on mapping crop raid spatial hot-spots, calculating tonnage of consumed produce, or estimating direct financial damages incurred by agricultural producers (Hill, 2004; Naughton-Treves & Treves, 2005). While these quantitative estimations assist protected area managers in spatial planning, they frequently ignore the broader social setting within which wildlife incursions occur. Critical scholars point out that treating HWC as a simple biological interaction between humans and animals ignores how social hierarchies and institutional policies dictate who bears the financial and physical costs of living alongside protected wildlife (Barua et al., 2013; Redpath et al., 2013).

2.2 *Feminist Political Ecology and the Gendered Distribution of Environmental Hazards*

To address the social analytical blind spots of conventional conservation literature, Feminist Political Ecology (FPE) conceptualizes environmental hazards as deeply gendered socio-political processes (Rocheleau et al., 1996; Sultana, 2020). FPE posits that gender functions as a fundamental organizing principle that structures differential access to land, natural resources, state institutions, and decision-making authority (Elmhirst, 2011; Nightingale, 2011). Rather than treating rural agrarian communities as homogenous, cohesive units, FPE dismantles the household to reveal intra-household bargaining, resource inequality, and conflicting gender interests (Agarwal, 2001; Resurrección & Elmhirst, 2020).

In rural sub-Saharan Africa, gendered divisions of labor assign distinct spatial domains and productive duties to men and women (Doss, 2018). Men typically oversee commercial cash cropping, land clearing, and physical defense of farm plots, whereas women manage subsistence food crop production, domestic provisioning, water and fuelwood collection, and reproductive care work (Gore & Kahler, 2012). Consequently, when large mammals breach park boundaries, risk exposure aligns with these gendered roles. Men face direct, life-threatening confrontations while guarding crops at night, whereas women experience severe indirect or "hidden" vulnerabilities—such as acute food insecurity, time poverty, increased caregiving obligations for injured family members, and domestic spatial insecurity when wildlife approaches residential homesteads (Adler et al., 2025; Barua et al., 2013).

2.3 *Post-Conflict Resettlement, Land Tenure Insecurity, and Asset Erosion Dynamics*

In post-war landscapes, environmental frictions are acutely intensified by the legacies of armed conflict and forced displacement (Branch, 2011; Dolan, 2009). In Northern Uganda, two decades of violent conflict between the LRA and government forces forced over 1.8 million Acholi civilians into IDP camps, halting agricultural production and transforming former farmlands into dense bushland and secondary wildlife corridors (Branch, 2011; Kobusingye, 2017). Following the 2006 peace process, decongested households returned to ancestral lands bordering protected areas like Murchison Falls National Park, only to find their land overlapping with established elephant foraging routes (Adong et al., 2025; Kazibwe, 2025).

When returning post-conflict communities encounter recurrent crop raiding, their capacity to recover is severely hindered by depleted asset bases and customary land tenure fragility (Kobusingye, 2017; Ochen et al., 2025). Applying the Sustainable Livelihoods Framework (SLF) reveals that wildlife incursions cause cascading, multi-capital asset erosion (DFID, 1999; Scoones, 1998). Crop destruction (natural capital) directly eliminates household income and market surpluses (financial capital), forcing families to default on agricultural microcredit loans and liquidate livestock. This economic collapse triggers severe dietary deficits and psychological trauma (human capital), structural damage to residential huts and granaries (physical capital), and severe strain on community mutual-aid safety nets (social capital). In post-war settings, this systemic asset depletion frequently leads to secondary displacement, forcing destitute households to abandon ancestral lands and migrate to informal urban centers (Ochen et al., 2025).

2.4 *Critical Assessment of Conservation Governance, Technical Mitigation, and Hidden Costs*

Mainstream conservation governance heavily emphasizes technical deterrence interventions such as deterrence trenches, chilli-greased fences, beehive barriers, and solar electric fencing (Hoare, 2015). However, empirical literature increasingly highlights the systemic failure and social illegitimacy of top-down technical fixes when implemented without community participation or gender-responsive design (Agarwal, 2001; Dickman, 2010). Deterrence barriers frequently fail due to maintenance neglect, topography, and elephant behavioral adaptation, transferring the primary burden of wildlife deterrence back onto impoverished rural farmers (König et al., 2020; MacKenzie & Ahabyona, 2012).

Furthermore, state wildlife conservation policies often prioritize wildlife protection and national tourism revenue generation while failing to provide timely ranger interventions or equitable compensation for community crop losses and casualties (Redpath et al., 2013). This institutional exclusion generates deep community distrust toward state conservation agencies like the Uganda Wildlife Authority (UWA). It also conceals the uncompensated "hidden costs" of conservation including chronic sleep deprivation, fear, educational disruption among children, marital distress, and emotional trauma (Barua et al., 2013; Gore & Kahler, 2012). Addressing

these critical literature gaps requires an integrated empirical investigation into how gender, post-conflict history, and governance institutions intersect at the conservation frontier.

3. Methodology

3.1 Study Design and Philosophical Orientation

This study adopted a convergent parallel mixed-methods research design (Creswell & Plano Clark, 2018), underpinned by a pragmatic philosophical orientation. Pragmatism prioritizes the research problem over epistemological exclusivity, endorsing the concurrent collection and integration of quantitative and qualitative data to generate comprehensive, actionable knowledge (Creswell & Plano Clark, 2018). Quantitative methods established the prevalence, spatial distribution, frequency, and material extent of elephant crop raiding, while qualitative inquiry captured the nuanced lived experiences, intra-household gender dynamics, coping strategies, and institutional perceptions of affected community members.

3.2 Study Area

The empirical research was conducted in Lii Sub-county, located in Nwoya District, Northern Uganda. Lii Sub-county encompasses an administrative area of approximately 485.6 km² and has a total population of 39,601 residents (comprising 19,473 males and 20,128 females) (UBOS, 2024). Lii Sub-county shares a direct border with Murchison Falls National Park (MFNP), Uganda's largest conservation area covering 3,893 km² and housing significant populations of African elephants and buffaloes. The study specifically focused on four highly affected agrarian villages: Celpeke, Te-Obee, Mwodo, and Langele located in Ceke Village, Langele Parish. Households in these villages are located between 0.5 km and 8.0 km from the protected park boundary, placing them in direct geographical proximity to active wildlife corridors.

3.3 Target Population, Sample Size, and Sampling Techniques

The study targeted rural agricultural households, local administrative leaders, community elders, and institutional representatives with direct experience or management responsibility regarding HWC. A multi-stage sampling strategy was employed:

Quantitative Survey: A random sampling technique was utilized to select 126 household heads (or senior adult representatives) across the four target villages. The quantitative sample provided representative coverage of households experiencing varying degrees of elephant exposure.

Qualitative Sample: Purposive sampling was used to select participants for 6 Key Informant Interviews (KIIs) and 5 Focus Group Discussions (FGDs). KII participants included local council leaders (LC1/LC3), Uganda Wildlife Authority (UWA) game rangers, district agricultural officers, and female community leaders. FGDs were gender-differentiated (2 men-only groups, 2 women-only groups, and 1 mixed group) to ensure psychological safety and uninhibited discussion. Each FGD comprised 8 participants, yielding a total of 40 FGD participants.

Table 1: Summary of Methodological Approach and Data Sources

Data Category	Method / Tool	Sample Size / Participants	Primary Target Information
Quantitative Survey	Structured Questionnaire	126 Rural Households	Crop loss acreage, raid frequency, asset damage, financial debt, basic demographics.
Key Informant Interviews	Semi-Structured KII Guides	6 Key Informants (UWA, LCs, NGO staff)	Institutional governance, ranger response, mitigation policy, regional conflict trends.
Focus Group Discussions	Gendered FGD Guides	5 FGDs (40 total participants: 20 men, 20 women)	Lived experiences, intrahousehold gender labor, fear, coping strategies, marital strain.
Field Observations	Observation Checklist & GPS	4 Target Villages (0.5–8 km from park)	Trench integrity, fence condition, crop damage patterns, housing destruction.

Source: Research Data, 2025

3.4 Data Collection and Triangulation

Data collection utilized multiple research instruments to facilitate rigorous methodological triangulation. Survey questionnaires captured quantitative variables regarding household demographics, acreage cultivated, crop raiding frequencies, monetary estimates of yield losses, and mitigation adoption. Qualitative instruments explored the thematic nuances of gendered vulnerability, time poverty, emotional trauma, institutional exclusion, and historical displacement memories. Field observation checklists and photographic documentation corroborated reported physical destruction of crops, granaries, and residential structures.

3.5 Data Analysis and Ethical Considerations

Quantitative survey data were coded and cleaned using SPSS version 26, generating descriptive statistics (frequencies, percentages, means, and standard deviations) to establish conflict patterns. Qualitative audio recordings from KIIs and FGDs were transcribed verbatim, translated from Acholi (Luo) into English where necessary, and analyzed using thematic analysis. Coding structures were iteratively developed based on FPE and SLF theoretical dimensions.

The Gulu University Research Ethics Committee (GUREC) officially granted ethical clearance for the study on 17 March 2025 under reference number GUREC-2025-1202. Administrative authorization was obtained from the Office of the Chief Administrative Officer (CAO) of Nwoya District. Written and verbal informed consent was secured from all participants prior to interviews. Anonymizing participant names and replacing them with alphanumeric identifiers in qualitative transcripts strictly maintained confidentiality and anonymity.

4. Findings

The empirical findings of this study confirm that elephant incursions in Lii Sub-county generate severe, multifaceted shocks that reverberate across all dimensions of community life. Crucially, the evidence demonstrates that these impacts are thoroughly gendered, deeply rooted in post-conflict resettlement dynamics, and exacerbated by institutional weaknesses in conservation governance.

4.1 Gendered Exposure to Risk and Direct Physical Harm

The study establishes that physical exposure to elephant encounters is highly gendered, directly reflecting the socially assigned divisions of labour and spatial roles within rural Acholi households. Men bear the primary burden of direct, confrontational risk as a consequence of societal expectations that mandate men to act as physical protectors of family land and capital assets. During peak crop-ripening seasons (particularly for maize, groundnuts, and rice), men spend consecutive nights in makeshift elevated watchtowers or open fields, using lanterns, drums, and fire whips to deter invading herds.

This nocturnal vigilance exposes men to extreme physical danger. Field narratives vividly illustrate the traumatic encounters men endure during crop protection. One male survivor recounted a severe elephant attack during night watch:

"I fell about 10 meters away... it scooped soil, buried me, and trampled on my left leg before leaving." (Male Respondent, Celpeke Village)

Another male participant described a horrific confrontation while attempting to defend his agricultural fields:

"It immediately grabbed me by its trunk, wrestled me, and threw me in a ditch." (Male Respondent, Te-Obee Village)

In contrast, women's physical exposure is predominantly domestic and peri-domestic, occurring around homesteads, water collection points, and firewood gathering routes. Because elephants routinely range beyond farm plots into village settlements in search of water and stored grain, domestic spaces no longer provide sanctuary. Respondents reported frightening incidents of elephants ransacking residential huts and demolishing granaries. In one tragic account documented during FGDs, an elephant invasion resulted in the death of a pregnant woman and her unborn twins when her home was demolished at dusk. Furthermore, female exposure is reinforced by coercive local enforcement mechanisms: women reported that local community watch groups enforce compulsory participation in night guarding, imposing punitive fines (e.g., 10,000 UGX or confiscation of cooking saucepans and jerrycans) on households that fail to send a representative. These practices redistribute risk onto women without providing adequate security (Adler et al., 2025; Barua et al., 2013).

4.2 Labour Burden, Extended Surveillance, and Gendered Time Poverty

Recurrent wildlife incursions fundamentally alter rural labor allocation, creating severe 'time poverty' that disproportionately afflicts women. HWC transforms routine agricultural work into an exhausting, round-the-clock risk-management enterprise. Men spend entire nights guarding fields, leaving them physically exhausted during daytime hours and unable to undertake supplementary economic activities. As one respondent observed:

"Our men have been guarding crops for four days without coming home, but the elephants still destroyed 20 acres of crops last week." (FGD Participant, Langele Village)

For women, HWC induces a severe compounding of productive, reproductive, and survival responsibilities. In addition to daytime agricultural cultivation, women maintain primary responsibility for childcare, cooking, fetching water, gathering firewood, and caring for injured family members. When crops are destroyed, women must expend extra hours seeking casual wage labour, gathering wild food supplements, or traveling longer distances to secure food. A female participant summarized this overwhelming burden:

"As women we are faced with many issues... increased workload and reduced rest. We harvest rice in other people's gardens for a very small daily wage... sometimes there is no work at all." (Female Respondent, Mwodo Village)

4.3 Crop Destruction, Food Insecurity, and Nutritional Vulnerability

Elephant crop raiding severely undermines household food availability and dietary quality in Lii Sub-county. Elephants target key dietary staples, including maize, cassava, sweet potatoes, groundnuts, and soybeans. Because elephants possess massive consumption capacities and destructive trampling behaviour, a single nocturnal raid can eradicate an entire household's seasonal harvest within hours. Furthermore, elephants frequently breach homestead granaries, consuming stored seeds and destroying food reserves. To manage extreme food deficits, households adopt drastic coping mechanisms, such as reducing daily meal intake from three meals to a single meal per day. One respondent noted:

"The elephants destroyed all my crops. Now I struggle to feed my children. We now eat one meal a day."

From an FPE perspective, food insecurity is intensely gendered. Culturally tasked with household provisioning and child nutrition, women absorb the psychological and physical strain of managing food scarcity. Women frequently curtail their own nutritional intake to feed young children, concealing intra-household food deprivation that aggregate economic surveys fail to capture (Doss, 2018; FAO, 2022).

4.4 Livelihood Diversification, Indebtedness, and Economic Inequality

While development policy literature emphasizes livelihood diversification as a pathway to rural resilience, this study reveals that HWC drives 'distress-driven' diversification that deepens economic vulnerability. In an effort to avoid elephant destruction, several farmers attempted shifting from food crops to non-palatable cash crops like cotton. However, cash crop production increases reliance on commercial market purchases for basic food, exposing households to severe price volatility.

Crucially, elephant incursions convert agricultural credit into a major trap of institutional indebtedness. Many farmers secure loans from microfinance institutions or Village Savings and Loan Associations (VSLAs) to purchase high-yield seeds and fertilizers. When elephants destroy the crop prior to harvest, farmers default on loan repayments, triggering asset confiscation and extreme financial distress. As one farmer appealed:

"Some residents who took loans to cultivate crops have failed to repay them after elephants ate their crops. We request that they should find a way of helping those who picked agricultural loans."

HWC thus functions as a poverty-reinforcing mechanism that widens inequality between asset-wealthy households and asset-poor families (Scoones, 1998).

4.5 Post-War Resettlement, Secondary Displacement, Land Loss, and Cultural Identity

A critical finding of this research is the direct connection between human-wildlife conflict and Northern Uganda's post-war displacement trajectory. Following IDP camp decongestion, returning Acholi families viewed land restitution as the cornerstone of economic recovery, cultural identity, and intergenerational continuity. However, settling adjacent to MFNP boundaries exposed returning households to unyielding elephant incursions. When persistent crop destruction renders farming impossible, families are forced to abandon their ancestral lands a second time, relocating to trading centers like Langele to rent small rooms. A displaced landowner lamented:

"I left my land and home and moved to rent a house here in Langele center... I want to maintain my land so my children can inherit it, but elephants razed down the house in which two of my children were sleeping." (Respondent, Langele Parish)

This secondary displacement reproduces post-conflict vulnerability, transforming returning landowners into landless tenants and disrupting customary inheritance systems (Branch, 2011; Ochen et al., 2025).

4.6 Conservation Governance, Institutional Exclusion, and Community Distrust

Community perceptions regarding conservation institutions specifically the Uganda Wildlife Authority (UWA) are characterized by deep dissatisfaction and distrust. Respondents expressed frustration over slow ranger response times, inadequate deterrent infrastructure, and complete lack of compensation for destroyed crops and loss of human life. Statements such as "sometimes the game rangers do not show up" and "nothing has been done despite many reports" reflect a pervasive feeling of institutional exclusion. Existing technical mitigation measures including chilli fences, bee-hive fences, and deterrence trenches are widely regarded as ineffective due to limited spatial coverage, lack of maintenance, and elephant behavioral adaptation. FPE analysis demonstrates that state conservation governance disproportionately transfers the burden of wildlife protection onto poor rural farmers while centralizing tourism revenues at the national level (Agarwal, 2001; Elmhirst, 2015). This perceived injustice erodes community support for biodiversity conservation.

4.7 Psychosocial Trauma, Household Strain, and 'Hidden Impacts'

Beyond quantifiable economic and material losses, HWC imposes profound 'hidden impacts' (Barua et al., 2013) on psychological wellbeing and social relations. Community members live in a state of chronic terror and hypervigilance. Remarkably, multiple respondents explicitly compared the psychological terror of night-time elephant raids to the trauma endured during the LRA war:

"We never know when elephants will come again... It is as if we are back in the times of the LRA."

Furthermore, extended night guarding strains marital and domestic relationships. Women expressed worry regarding husband absence, domestic desertion, and suspicions of extra-marital affairs during multi-day guarding expeditions. HWC also disrupts schooling, as children are kept home to guard fields or skipped classes due to sleep deprivation and night danger. These psychological and social strains erode community social capital and intergenerational development (Barua et al., 2013).

Table 2: Comparative Synthesis of Gendered HWC Vulnerabilities and Livelihood Capital Loss

Livelihood Capital	Men's Primary Vulnerability	Women's Primary Vulnerability	Systemic Livelihood Impact
Natural Capital	Loss of commercial crop acreage and cash investment.	Loss of household food plots and seed reserves.	Persistent farmland abandonment along park borders.
Human Capital	Direct physical injuries, elephant trampling, severe fatigue.	Extreme time poverty, malnutrition, care burden, trauma.	Compromised labour productivity and disrupted child education.
Financial Capital	VSLA loan defaults, asset forfeiture, debt accumulation.	Loss of informal trading income and casual wage security.	Transformation of credit from investment tool to debt trap.
Physical Capital	Destruction of farm watchtowers and agricultural tools.	Demolition of residential huts, kitchens, and granaries.	Secondary displacement and housing tenure insecurity.
Social Capital	Frustration with UWA rangers, breakdown in ranger trust.	Strained marital relations, domestic isolation, burden.	Erosion of traditional mutual-aid agricultural safety nets.

Source: Research Data, 2025

5. Conclusion and Policy Recommendations

5.1 Analytical Synthesis and Research Findings

This study demonstrates that human-wildlife conflict in post-conflict Northern Uganda is fundamentally an ecological, socioeconomic, gendered, and governance problem. Elephant incursions in Lii Sub-county cannot be solved through simplistic animal deterrence technologies alone. Through the combined theoretical frameworks of Feminist Political Ecology and Sustainable Livelihoods, the manuscript illustrates how wildlife conflict interacts with historical legacies of LRA war displacement, customary land tenure fragility, and unequal power relations. Recurrent elephant raids systematically erode natural, human, financial, physical, and social capital assets, creating cumulative vulnerability cycles that block post-war recovery.

Importantly, HWC impacts are deeply gender-differentiated. While men face direct physical danger during nocturnal crop guarding, women absorb disproportionate indirect costs through food insecurity, intense time poverty, emotional care work, domestic space insecurity, and secondary land displacement. Current top-down conservation management excludes women from decision-making and ignores the hidden psychosocial impacts of chronic wildlife insecurity.

5.2 Policy and Governance Implications

To achieve sustainable human-wildlife coexistence, state conservation policy must transition from reactive, technical animal control to gender-responsive, transformative governance. Conservation authorities must recognize that rural farming communities living at protected area frontiers cannot continue to subsidize national biodiversity conservation through uncompensated crop losses, bodily harm, and economic devastation.

5.3 Actionable Policy Recommendations

Gender-Responsive Conservation Governance: Formally mandate equal representation of women on local Human-Wildlife Conflict Management Committees and Park Management Boards to ensure women's priorities shape mitigation decisions.

Comprehensive Mitigation and Boundary Infrastructure: Upgrade Park boundary protection around MFNP through state-funded, high-specification solar electric fencing, complemented by well-maintained trench networks and strategic ranger outposts.

Equitable Wildlife Compensation and Insurance: Operationalize a transparent, prompt compensation scheme under the Uganda Wildlife Act (2019) that covers not only crop destruction but also loss of life, physical injury, property damage, and destroyed seed granaries.

Psychosocial and Post-Conflict Trauma Support: Integrate mental health counselling and psychosocial support services into post-conflict recovery and wildlife management programs in Nwoya District.

Sustainable Livelihood Support and Debt Relief: Establish dedicated relief funds and low-interest microcredit restructuring for farmers suffering wildlife-induced loan defaults, while promoting gender-sensitive, non-palatable crop enterprise options.

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