OPERATION LAFIYA DOLE (2015–2023): ENVIRONMENTAL IMPACTS IN NORTHEAST NIGERIA

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Operation Lafiya Dole, Boko Haram, Counterinsurgency, Environmental degradation, North-East Nigeria

Abstract

Background*: For over a decade, North-East Nigeria has been at the epicentre of the Boko Haram insurgency, one of Africa's most protracted conflicts. In response, the Nigerian government launched Operation Lafiya Dole in 2015 as its flagship counterinsurgency campaign to degrade Boko Haram and restore stability. Meaning "peace by force" in Hausa, the operation involved intense kinetic actions, including ground offensives and aerial bombardments.*

Objective: *The paper examines the environmental impacts of Operation Lafiya Dole, highlighting how counterinsurgency measures interacted with insurgent activities to affect local ecosystems, livelihoods, and communities.*

Methods*: The paper adopts a multi-source historical methodology, drawing on secondary sources including military communiqués, government reports, UN and NGO assessments.*

Results*: The findings of the paper reveal that the conflict and counterinsurgency led to extensive deforestation, particularly in the Sambisa Forest, habitat fragmentation, overhunting of species like elephants and warthogs, pollution from munitions, land degradation, soil erosion, and water contamination.*

Conclusion*: While Operation Lafiya Dole restored relative security and degraded Boko Haram's capabilities, it generated long-term environmental degradation and socio-economic challenges that undermine sustainable recovery in the North-East, with implications*

persisting into 2025.

Key Contribution to Knowledge *The paper fills a critical gap by systematically documenting the often-overlooked environmental footprint of counterinsurgency operations in Nigeria and extends existing scholarship on conflict-induced environmental security threats in Africa.*

Recommendations: *The paper recommends integrating environmental impact assessments into military planning and prioritising post-conflict ecosystem restoration.*

Introduction

The Boko Haram insurgency, initiated in 2009, is recognised as one of Africa's most protracted and devastating conflicts, resulting in tens of thousands of deaths, over two million displacements, and significant humanitarian crises across North-East Nigeria and the broader Lake Chad Basin (International Crisis Group 10–12; Dunn 3–5). Scholarly investigations have predominantly analysed the insurgency through the lenses of security dynamics, military strategies, ideological extremism, and governance shortcomings (Varin and Abubakar; Okoli and Lenshie). Tactical evaluations have condemned the Nigerian military's counterinsurgency techniques, highlighting concerns like resource constraints, human rights abuses, and coordination inadequacies (Omeni, 2019; Onuoha, Nwangwu, and Ugwueze, 2020). Another research domain situates the circumstances within the environmental and climatic stresses of the Lake Chad Basin. Employing Homer-Dixon's environmental scarcity thesis, studies by Vivekananda et al. and Nagarajan et al. link desertification, the decline of Lake Chad, and decreased agricultural productivity to livelihood vulnerability and insurgency recruiting. These scholars emphasise climate change and environmental scarcity, particularly the substantial diminishment of Lake Chad, as key factors exacerbating resource competition, livelihood precariousness, and insurgency recruitment in the Sahelian region (Vivekananda et al. 14–18; Nagarajan et al. 6–9). Research correlates these pressures with heightened food insecurity, childhood malnutrition, and socio-economic decline (Dunn, Mahmood, and Jia 11–14). This compilation of research predominantly attributes degradation to pre-conflict climatic factors or insurgent actions, often overlooking the reciprocal environmental costs associated with prolonged counterinsurgency operations.

Machlis and Hanson's combat ecology, in conjunction with Dalby's environmental security analysis, demonstrate the adverse effects of military activities on ecosystems, while Bruch et al. underscore the challenges of managing natural resources post-conflict. Nevertheless, these studies scarcely investigate Nigeria or analyse Operation Lafiya Dole as a focal point of environmental change. Olaniyan's analysis of the Sambisa Forest, in conjunction with research from UNEP and OCHA, acknowledges ecological damage; nonetheless, these studies are predominantly descriptive and offer scant historical links to specific counterinsurgency methods. Likewise, socio-economic assessments performed by UNICEF, IOM, UNHCR, and CSIS document relocation and economic deterioration without systematically associating these outcomes with the environmental

degradation caused by counterinsurgency operations.

This publication occupies this gap. This dissertation analyses Operation Lafiya Dole not solely as a counterterrorism or stabilisation effort, but as an embodiment of environmental governance that significantly transformed ecosystems and livelihood structures in North-East Nigeria. This viewpoint contrasts with existing research that mostly focuses on insurgent violence, humanitarian impacts, or climate stress as contextual elements, by highlighting counterinsurgency as a driver of environmental and socio-economic change. The research augments a thorough understanding of counterinsurgency by demonstrating that military operations affect not just combat outcomes but also the ecological foundations crucial for post-conflict recovery, sustainability, and lasting peace in North-East Nigeria.

Research Problem

This dissertation examines the critical research gap concerning the absence of a comprehensive and historically contextualised analysis of the environmental consequences of Nigeria's counterinsurgency operations, specifically Operation Lafiya Dole, within the existing literature on the Boko Haram conflict. The Boko Haram insurgency and Nigeria's counterinsurgency efforts have generated extensive scholarly research; nonetheless, the specific environmental impacts of Operation Lafiya Dole remain insufficiently explored, indicating a notable gap in the literature. Dominant scholarly viewpoints have analysed the conflict primarily through security and ideological lenses, humanitarian crises, or environmental susceptibility intensified by climate change and the depletion of Lake Chad. The lack of a focused analysis linking counterinsurgency techniques to environmental degradation and socio-economic disruption constitutes a significant shortcoming in Nigerian conflict studies and the broader discussion on battle ecology and environmental security. This paper seeks to address this gap by examining Operation Lafiya Dole as both a security initiative and an environmental factor, assessing the interplay between military operations and insurgent actions that led to enduring ecological and livelihood consequences in North-East Nigeria.

Research Objectives

Based on the issues identified in the research problem, this study was guided by the following objectives:

i. To analyse how counterinsurgency practices under Operation Lafiya Dole transformed forest ecosystems, land use, water resources, and wildlife habitats in North-East Nigeria.

ii. To assess how enemy-centric operational logics shaped environmental and livelihood outcomes in North-East Nigeria.

Methodology

This paper employs a multi-source historical technique. We analysed materials including military communiqués, government reports, official documents from National Bureau of Statistics surveys, NGO and UN reports from agencies such as UNHCR, IOM, and the World Food Programme, human rights NGOs, journalistic sources, news reports from Nigerian and international media, and secondary scholarly literature. The document included published field interviews carried out by journalists or NGOs with principal informants. The document integrates government records, including

Defence Headquarters news releases, NGOs, and media sources, to encompass both official and human-impact perspectives.

Conceptual Clarification

Counterinsurgency includes both civic and military initiatives to combat insurgency while tackling underlying causes. It juxtaposes enemy-centric (kinetic, force-oriented) strategies, which prioritise the degradation of insurgents through operations such as bombardments and territorial control (Kilcullen; Galula), with "population-centric" frameworks that emphasise governance, development, and civilian protection (U.S. Army and Marine Corps 3-24). Within the framework of Operation Lafiya Dole, the Nigerian military's strategy predominantly adhered to an enemy-centric model, marked by kinetic operations including aerial bombardments, vegetation clearance to eliminate cover, and territorial reclamation, frequently emphasising immediate tactical advantages at the expense of long-term community engagement or environmental protections. International Crisis Group.

Background to Operation Lafiya Dole

For more than ten years, North-East Nigeria was the focal point of the Boko Haram insurgency during its zenith. In 2015, the Nigerian government initiated Operation Lafiya Dole as a significant military campaign to suppress the insurgency and re-establish stability in the region. “Lafiya Dole,” translating to “peace by force” in Hausa, was designated as the codename for the counterinsurgency operations conducted by the Nigerian Army’s theatre command in the North-East. Operation Lafiya Dole was initiated by the Nigerian Army in May 2015 under the leadership of then Chief of Army Staff, Lt-Gen. Tukur Buratai, after the previous Operation Zaman Lafiya.

Lafiya Dole was a dynamic counter-insurgency operation aimed at expelling Boko Haram and ISIS-West Africa (ISWAP) militants from occupied regions (“Operation Lafiya Dole” 11). In mid-2015, military forces captured towns such as Bama, Gwoza, and Dikwa, primarily due to Army and air force offensives. By late 2016, aided by regional allies Cameroon, Chad, and Niger through a Multinational Joint Task Force and local volunteer militia (the Civilian Joint Task Force), the Nigerian military had expelled Boko Haram from the majority of its Nigerian strongholds. A significant climax transpired on 22 December 2016, when forces captured “Camp Zero” in the Sambisa Forest, the insurgents’ final major bastion. Certain experts interpret this as a "blitzkrieg" triumph, expelling Boko Haram from all its bases in Nigeria at that time (Adam Smith International 6).

Subsequent years witnessed ongoing seek and destroy operations, aerial assaults on rebel encampments, and initiatives to stabilise liberated communities to facilitate the return of displaced inhabitants. From 2015 until 2020, Operation Lafiya Dole substantially diminished Boko Haram's capabilities; yet, the insurgency evolved into a prolonged guerrilla conflict. The Sambisa Forest, an extensive reserve spanning over 500,000 hectares across five states, emerged as a bastion for terrorists and a central target of military operations. In 2017, Nigerian soldiers seized Boko Haram's Camp Zero in Sambisa, marking a symbolic triumph; nonetheless, breakaway factions, particularly ISWAP, persisted in executing assaults, frequently originating from strongholds in the Lake Chad wetlands.

The military operation consequently extended to those regions, resulting in frequent confrontations along the borders and on the islands of Lake Chad. In 2021, after the demise of Boko Haram commander Abubakar Shekau,

numerous terrorists capitulated or pledged loyalty to ISWAP, prompting the Army to restructure Operation Lafiya Dole into Operation Hadin Kai to signify a collaborative civil-military stabilisation initiative. This article, for the sake of consistency, addresses the counterinsurgency operations in the North-East from 2015 to 2023 under the framework of Operation Lafiya Dole ("Operation LAFIYA DOLE: Nigeria's Counterinsurgency" 12). The extended conflict during this period incurred severe human costs. By 2021, an estimated 35,000 to 40,000 individuals perished due to direct fighting in the North-East, with numerous additional fatalities resulting from conflict-induced famine and disease. During the peak of the conflict, more than 2 million Nigerians were internally displaced in the region, while hundreds of thousands more sought asylum in neighbouring countries, including Cameroon, Niger, and Chad. Communities saw extensive devastation, with entire towns incinerated by rebels or military actions, and critical infrastructure obliterated (Achus Jah et al. 9). The subsequent sections elucidate that these events engendered a profound humanitarian crisis while also causing significant harm to the ecology and socio-economic structure of North-East Nigeria.

Environmental Impacts

Military operations and insurgent activities under Operation Lafiya Dole have left a profound mark on the environment of North-East Nigeria. The region's semi-arid savannah and forest ecosystems, once home to diverse flora and fauna, have been disrupted by combat operations, occupation, and resource exploitation related to the conflict. Key environmental impacts include deforestation and habitat loss, pollution and land degradation, water contamination, and harm to wildlife and protected areas.

Deforestation and Habitat Destruction

One of the most critical environmental outcomes during the Operation Lafiya Dole military campaign was forest loss. The Sambisa Forest, once a 518 km² game reserve (gazetted in 1958) rich in flora and fauna, was transformed into a war zone. As Olaniyan noted, "the once-thriving game reserve is dead, the animals are gone, and what remains is a battalion of Nigerian troops battling the terrorists (Olaniyan 19)".One of the most visible environmental consequences of the conflict has been deforestation and the loss of natural habitats. As Boko Haram militants entrenched themselves in remote areas, they often did so in forests, using them as cover and bases for operations.

In response, the Nigerian military frequently cleared vegetation to deprive insurgents of hideouts and to establish forward operating bases. Notably, Sambisa Forest, once a vast game reserve known for its woodland and rare wildlife, has been severely degraded by years of warfare. Military offensives in and around Sambisa led to the clearing of large swathes of forest for camps, trenches, and access roads. The flora and fauna of the area have been negatively impacted, trees and shrubs were cut or burned, and wildlife either fled, were killed in crossfire, or lost their habitat. Notably, Sambisa had been a habitat for species such as forest elephants, chimpanzees, antelopes, and various primates; observers report that these populations have dwindled or migrated as their ecosystem was fragmented and scarred by conflict.

Beyond Sambisa, many other forests and rangelands in Borno and adjacent states saw increased deforestation. The influx of internally displaced persons (IDPs) and refugees created additional pressures on the environment around towns and camps. Displaced families, lacking

access to their farms, often resorted to cutting trees for firewood, charcoal production, or to construct makeshift shelters. This conflict-driven wood harvesting led to noticeable forest loss near IDP settlements and military garrisons. In northern Borno, for instance, satellite imagery between 2015 and 2020 showed a significant reduction in tree cover around Maiduguri's outskirts and along the main roads, partly attributed to the demand for fuelwood in camps and the military's use of timber for fortifications.

One report by the **United Nations Office for the Coordination of Humanitarian Affairs (OCHA)** noted that deforestation in conflict-affected parts of the North-East was occurring at over double the pre-insurgency rate, threatening to accelerate desertification in an already fragile Sahelian environment (United Nations Office for the Coordination of Humanitarian Affairs 21).Interrogating OCHA's findings reveals a critical insight: the deforestation rate doubled compared with pre-insurgency levels, which points to how socio-political shocks amplify environmental vulnerability. However, OCHA does not disaggregate the contributions of military infrastructure use, such as timber for fortifications, from the survival strategies of displaced populations. When this gap is considered alongside local reports of wood harvesting for fuel and construction, it becomes evident that environmental degradation during Lafiya Dole was not uniform but shaped by multiple, intersecting pressures, military, humanitarian, and civilian. This suggests that environmental impacts are co-produced by conflict dynamics and coping mechanisms, a nuance often overlooked when deforestation is treated solely as an outcome of insurgency activity.

Habitat destruction during the insurgency and counterinsurgency in northern Nigeria was not simply incidental; it was often a direct result of deliberate tactical choices with far-reaching ecological consequences. Both Boko Haram and military forces employed scorched-earth strategies: insurgents burned entire villages, while the military sometimes cleared bushland along roads to remove cover for ambushes. Reports from Gujba and Gulani districts in Yobe state, which were liberated from insurgents around 2016, describe once-wooded landscapes left barren, with soil exposed to erosion (International Crisis Group 31). These findings highlight a difficult tension in counterinsurgency: actions intended to protect communities or deny resources to the enemy can simultaneously destroy the natural environment on which those same communities depend. Military strategy, in other words, carries hidden environmental costs that often go unacknowledged in the literature.

A study on post-insurgency wildlife reports that warthogs, a keystone species in northern Nigeria, were being killed at unsustainable rates. Elephants were hunted out, and poachers therefore turned to warthogs for ivory-like tusks. One journalistic report by Humangle's Alamin Umar finds that "poachers and terrorist groups like Boko Haram have shifted… to targeting warthogs… The warthog ivory trade has emerged as a lucrative black market that finances terrorism (Umar16)". This trade accelerated from around 2019 onward, as warthogs became easier targets than near-extinct elephants. The ecological consequences are profound; warthogs are major seed dispersers and soil-turners in the savannah. Their disappearance disrupts vegetation regeneration. As researchers note, without warthogs, "the disappearance of herbivore biodiversity… undermines ecosystem services that rural communities depend on (Umar 71)". Predators such as lions and hyenas lost prey and either starved or ventured into villages; cases of

predators scavenging near camps were reported. The cumulative effect is a less resilient ecosystem: loss of tree-nursery animals, which are known for seed dispersal, and increased erosion from untrammelled land. Due to intense operations in Borno's forests, even monkeys, birds, and reptiles have vanished from logged areas.

It is important to emphasize that other species were also affected. In the Sambisa Forest, locals reported that even panthers and baboons fled the violence, and 18 animal corpses were documented in 2016. Fish stocks in Lake Chad also suffered: war-related insecurity combined with climate change and water diversion drove overfishing in new areas, worsening the lake's ecological stress. Collectively, the literature frames these developments as an environmental crisis: "With climate shocks looming, the disappearance of wildlife… accelerates land degradation and reduces carbon sequestration" (Counter-Insurgency and the Military Strategy 21).

Bringing these sources together, it becomes clear that conflict in northern Nigeria did more than destroy human settlements; it disrupted ecosystems, weakened biodiversity, and undermined the environmental resilience of entire regions. Understanding the full impact of Operation Lafiya Dole, therefore, requires looking beyond immediate security outcomes to see how military and insurgent actions ripple across landscapes and communities, producing consequences that are both social and ecological.

Pollution and Land Degradation

The environmental consequences of Operation Lafiya Dole extend well beyond the immediate battlefield, reflecting the complex interplay between tactical military decisions and long-term ecological harm. Heavy ordnance, from artillery shells to improvised explosive devices, introduces toxic residues into soils and waterways, a problem well-documented in military training grounds elsewhere in northern Nigeria (Abdulsalam 243). While studies outside Borno report extreme soil lead concentrations of up to 17,500 µg/g, it is reasonable to infer that similar contamination has occurred in conflict zones subjected to sustained bombardment and troop movements. This suggests a pattern whereby military operations, even when designed to neutralise insurgents, produce insidious environmental hazards that persist long after the fighting ends. The literature frequently treats such contamination as incidental; however, it is better understood as an underappreciated dimension of counterinsurgency, with implications for both human health and ecosystem integrity.

Beyond ordnance residues, the destruction of infrastructure and civilian spaces has left hazardous debris scattered across towns and villages. Rubble from burned homes, destroyed markets, and vehicles often contained asbestos, electronics, and fuel residues, compounding environmental risks (Etim and Ola 10). The presence of decomposing livestock further polluted soils and water, illustrating how war-generated waste becomes a vector for both ecological and public health crises. This pattern reveals a critical insight that the conflict created a cascade of pollutants whose cumulative effects are seldom accounted for in assessments of military campaigns, yet which materially affect post-conflict recovery and ecological resilience.

Furthermore, military activity also degraded the land through physical disruption through the repeated movement of heavy vehicles and troops which stripped vegetation and compacted soils, particularly in the hilly regions of Borno and Adamawa, where locals report intensified gully erosion on slopes and deforested areas (Etim et

al. 8). These anthropogenic changes, amplified by seasonal rainfall, accelerated topsoil loss and altered local drainage patterns, creating secondary vulnerabilities such as flooding. By synthesising these observations, it becomes clear that the environmental footprint of Operation Lafiya Dole cannot be disentangled from the very tactics designed to secure territory; studies often note erosion and compaction, but rarely situate these phenomena as integral to an ecological cost-benefit analysis of counterinsurgency.

Air pollution, though episodic, further illustrates the unintended consequences of conflict. Fires from destroyed settlements and IDP camps, combined with military vehicle emissions and airstrikes, degraded local air quality (United Nations Office of the High Commissioner for Human Rights 20–21). While existing scholarship documents these episodes, a more critical reading highlights how localized pollution events intersect with public health, creating acute exposure risks that may persist in combination with soil and water contamination.

Effects on Wildlife and Ecosystems

North-East Nigeria's ecosystems, stretching from the Sahelian savannah to the Lake Chad wetlands, were not merely passive backdrops to the insurgency but active casualties of the conflict and its counterinsurgency response. Existing studies correctly identify poaching, habitat destruction, and lawlessness as drivers of wildlife decline, yet these factors need to be understood as structurally linked to the breakdown of governance and livelihoods produced by war. The conflict displaced both people and animals, but it also created conditions in which wildlife exploitation became normalised. Insurgents and civilians alike hunted animals for food and income, blurring the line between survival and organised environmental predation. Reports that Boko Haram fighters killed elephants for ivory and antelopes for meat point to the strategic use of natural resources to sustain armed violence. The apparent disappearance of species such as African wild dogs and gazelles from parts of the Chad Basin National Park suggests not only local extinction or migration, but also the erosion of conservation regimes under prolonged insecurity. These losses reflect a deeper ecological collapse in which protected status offered little defence once state authority weakened.

The Lake Chad ecosystem reveals how counterinsurgency measures further complicate environmental outcomes. Military restrictions on fishing were intended to disrupt insurgent supply chains, yet they reshaped ecological and economic pressures in uneven ways. Fish stocks increased in restricted zones while overfishing intensified in areas deemed accessible, creating new imbalances within the lake's fragile ecosystem. When military operations expanded into previously restricted areas, the sudden presence of patrol boats and engines disrupted breeding grounds for fish and waterfowl. The rise in chemical fishing by local vigilantes during periods of regulatory lapse, as documented by Ochu et al. (5769–5778), illustrates how conflict undermines environmental governance, allowing destructive practices to proliferate. Rather than treating these developments as isolated side effects, they should be read as evidence that security interventions can unintentionally accelerate ecological degradation when environmental considerations are excluded from operational planning.

At the same time, the literature also points to moments of partial alignment between military objectives and conservation goals. Official accounts indicate that units of Operation Lafiya

Dole coordinated with park authorities to protect sections of Gashaka Gumti National Park and Yankari Game Reserve from encroachment and poaching. The military presence around these reserves appears to have deterred illegal logging and wildlife trafficking in some locations ("Operation Lafiya Dole Troops Urged to Respect Human Rights" 21). While these efforts complicate a purely destructive narrative of military involvement, their limited scope underscores a central argument of this study, which stresses that isolated conservation successes cannot offset the broader ecological damage produced by sustained conflict. Taken together, the evidence suggests that counterinsurgency operations in North-East Nigeria generated uneven environmental outcomes, where localized protection coexisted with widespread ecosystem collapse. This contradiction highlights the need to critically reassess how military strategies interact with environmental systems in conflict zones, rather than treating ecological harm as an unavoidable or secondary concern.

Water Contamination

Access to clean water emerged as one of the most severe and enduring casualties of the insurgency and the counterinsurgency campaigns conducted under Operation Lafiya Dole. Existing humanitarian assessments correctly emphasise infrastructure destruction, but the evidence points to a broader pattern in which water systems became both deliberate targets and unintended victims of military strategy. UNICEF's estimate that approximately 75 percent of water and sanitation infrastructure was destroyed, leaving 3.6 million people without safe water, illustrates the scale of collapse, yet this statistic alone understates the strategic logic behind some of the damage. Accounts of Boko Haram deliberately contaminating wells with refuse or animal carcasses during retreats in 2015 reveal how water was weaponised to punish communities and deny resources to both civilians and advancing troops (UNICEF, Humanitarian Situation Report No. 15). These actions transformed water sources from lifelines into instruments of coercion, with long-term public health consequences.

Beyond intentional poisoning, the systematic destruction of water infrastructure further eroded regional resilience. From 2014 onward, Boko Haram dismantled borehole systems, looted generators, and rendered wells unusable by filling them with debris. By mid-2017, the reported destruction of roughly 1,600 wells in Borno State alone highlights how the insurgency dismantled the physical foundations of everyday survival. The case of the Alau Dam near Maiduguri underscores how conflict-induced neglect compounded direct damage. As a critical source of irrigation and potable water, its periodic inaccessibility due to fighting contributed to downstream scarcity and agricultural disruption (Amnesty International 17–18). Rather than isolated incidents, these examples point to a systematic breakdown of water governance under prolonged insecurity.

Humanitarian data further reinforces this interpretation, as evidenced by Solidarités International's finding that only about 25 percent of pre-conflict water, sanitation, and hygiene infrastructure remained functional by 2016 demonstrates that recovery lagged far behind destruction (Solidarités International 2–4). This suggests that water contamination was not merely a wartime phenomenon but a structural outcome of prolonged conflict, where restoration mechanisms were overwhelmed or absent.

Counterinsurgency operations also played a significant, if often indirect, role in degrading water quality. Heavy bombardment introduced

explosive residues, heavy metals, and propellants into soils and waterways. Artillery shells, aerial bombs, and grenades contain compounds that can leach into groundwater or be carried into streams through runoff. Reports from local fishermen of dead fish following airstrikes near riverbanks and lake shores provide empirical, if anecdotal, evidence of this process (Rufa'i 57). While systematic environmental sampling remains limited, these "fish kills" strongly suggest that shockwaves and chemical residues disrupted aquatic ecosystems. Environmental experts' warnings about explosive remnants contaminating water resources, therefore, merit closer attention than they have received in the existing literature.

More than a decade of conflict, repeated skirmishes in villages, farmlands, and wetlands likely compounded this contamination. In the Lake Chad Basin, insecurity disrupted the maintenance of irrigation dykes, canals, and drainage systems that once regulated water flow. As these structures deteriorated, rainwater accumulated in stagnant pools rather than supporting agriculture. Local reports of brackish and algae-choked ponds point to declining water quality and rising disease risk. Military cordon-and-search operations, while aimed at security control, also restricted fishermen's access to certain water bodies, inadvertently allowing stagnation and pollution to intensify over time (Rufa'i 64). These dynamics reveal how counterinsurgency practices intersected with ecological neglect to destabilise wetland systems.

Fuel and oil spills represent another under-acknowledged source of water contamination. Both insurgents and military forces relied heavily on vehicles and generators, and attacks on camps or hasty withdrawals often ruptured fuel storage drums. Diesel and petrol seeped into soils around abandoned or overrun bases, threatening groundwater and sterilising topsoil (Human Rights Watch 27). Findings from a former forward operating base in Yobe State, where vegetation failed to regenerate in areas associated with fuel dumping, illustrate the persistence of these pollutants. Rainfall likely carried hydrocarbons into nearby streams, extending contamination beyond the immediate sites. Unlike deliberate well-poisoning, these spills attracted little attention at the time, yet their environmental legacy may prove more enduring if left unremediated (United Nations High Commissioner for Refugees 1–3).

Taken together, the literature reveals that water contamination in North-East Nigeria was not a single-process outcome but the cumulative result of insurgent tactics, counterinsurgency operations, and prolonged institutional collapse. By synthesising these strands, this analysis demonstrates that the degradation of water systems was both a method of warfare and a consequence of militarised landscapes, with lasting implications for human security and ecological recovery.

Conclusion

This paper reorients the assessment of Operation Lafiya Dole by prioritising its environmental impacts as the focal point of examination, rather than considering them a secondary result of a successful counterinsurgency effort. The findings enhance the comprehension of counterinsurgency as both a security intervention and a practical kind of environmental governance. The paper illustrates that enemy-centric combat techniques significantly alter ecosystems, livelihoods, and post-conflict recovery paths. Operation Lafiya Dole not only addressed the environmental challenges posed by insurgency and climate change but also actively contributed to environmental transformation with enduring

socio-economic consequences. The results contradict prevailing narratives that ascribe environmental degradation in North-East Nigeria mainly to climate variability, the reduction of Lake Chad, or insurgency activities. This research demonstrates that counterinsurgency techniques exacerbated deforestation, habitat fragmentation, land degradation, and water contamination, contrary to earlier studies based on environmental scarcity theory that highlight pre-existing ecological stress as a trigger for violence. This corresponds with extensive scholarship on wartime ecology that recognises military operations as a crucial ecological agent, while also enhancing that literature through a historically contextualised case study from Nigeria. This study establishes a clear causal relationship between specific counterinsurgency practices and ecological outcomes, in contrast to descriptive assessments by humanitarian agencies and previous Nigerian studies that recognise environmental damage without systematically linking it to military operations. The findings partially align with prior research on the socio-economic effects of the Boko Haram conflict, namely concerning relocation, the collapse of livelihoods, and reliance on humanitarian aid. This paper, however, illustrates the interconnection between socio-economic issues and environmental degradation resulting from both insurgent violence and state-led military interventions. The degradation of natural capital, encompassing forests, animals, and water resources, represents a significant yet under examined factor by which conflict impedes long-term recovery and stability.

The legacy of Operation Lafiya Dole exemplifies the duality of counterinsurgency operations. The campaign notably diminished Boko Haram's geographical dominance and reinstated a degree of security, while it concurrently inflicted environmental damage and socio-economic divisions that persistently influence post-conflict conditions in North-East Nigeria. The report advocates for a reevaluation of counterinsurgency techniques to integrate environmental factors as essential to durable peace, rather than as peripheral issues to be addressed post-military objectives.

Recommendations

This study's findings indicate that Operation Lafiya Dole, although successful in diminishing Boko Haram's military capabilities, resulted in considerable environmental degradation and socio-economic disruption, including deforestation, habitat destruction, pollution, water contamination, and the erosion of livelihood systems. These results indicate particular domains for policy and operational improvements.

1. Incorporate Environmental Protections into Military Strategy: Initially, environmental protections must be incorporated into counterinsurgency strategy, as the research indicates that enemy-focused tactics, including vegetation removal, aerial bombardment, and extended troop presence, have directly led to deforestation, soil degradation, and water contamination. Consequently, military actions in environmentally sensitive regions like the Sambisa Forest and Lake Chad marshes should be preceded by environmental risk assessments at the operational level. These evaluations should ascertain probable effects on forests, aquatic systems, and fauna, so guiding strategic decisions about the extent of vegetation removal, placement of forward operating bases, and management of fuel and waste. Educating military engineers and logistics units in fundamental environmental management will directly mitigate the reported issues of fuel leaks, incorrect trash disposal, and

contamination of land and water resources identified in this study.

2. Prioritise the restoration and Protection of Critical Ecosystems: Post-conflict ecosystem restoration is essential, since evidence indicates that environmental degradation has compromised livelihoods and hindered socio-economic recovery in North-East Nigeria. Extensive deforestation, loss of biodiversity, and land degradation have diminished access to fuelwood, agriculture, fishing, and grazing, exacerbating poverty and reliance on humanitarian aid. Consequently, targeted replanting of degraded forest regions, especially in and around Sambisa, should be integral to post-conflict rehabilitation initiatives. These projects must engage local communities, whose adaptive tactics during relocation have led to deforestation, thereby connecting environmental restoration to the recovery of livelihoods. Likewise, enhanced enforcement against illicit logging, charcoal manufacturing, and wildlife poaching is essential to avert additional environmental degradation in regions where state authority has been undermined by conflict.

A comprehensive monitoring and evaluation structure is needed, as the study reveals that the enduring effects of counterinsurgency are predominantly unrecorded and unregulated. Consistent assessment of forest cover, soil integrity, and water pollution would facilitate the early identification of ongoing deterioration resulting from unexploded ordnance remnants, fuel leaks, and infrastructural damage. Simultaneously, monitoring socio-economic variables such as water accessibility, agricultural output, and market recovery would facilitate the evaluation of how environmental degradation continues to influence human security. Incorporating these variables into post-conflict governance frameworks would guarantee that recovery measures address the interconnected environmental and socio-economic ramifications outlined in this study.

References

Abdulsalam, Dahiru. "Counter-Insurgency and the Military Strategy in Nigeria's North-East." *Journal of Political Discourse*, vol. 1, no. 3, 30 Sept. 2023, pp. 243–54, https://jopd.com.ng/index.php/jopdz/article/view/39.

Achus Jah, Emmanuel et al. "Insurgency and Counterinsurgency in North-East Nigeria: Precipices and Prospects." *Global Scientific Journal*, vol. 9, no. 5, May 2021, pp. 1489–1500. www.globalscientificjournal.com/researchpaper/INSURGENCY_AND_COUNTERINSURGENCY_IN_NORTH_EAST_NIGERIA_PRECIPICES_AND_PROSPECTS.pdf

Adam Smith International. *The Final Push*. 2018. ADF Magazine pg. 6.www.adf-magazine.com/the-final-push-discussing-the-capture-of-sambisa-forest-under-operation-lafiya-dole. Accessed 3 Nov. 2025.

Amnesty International. *Boko Haram: Civilians in North-East Nigeria Need Protection*. Amnesty International, April 2015, pp. 17–18. https://www.amnesty.org/en/documents/afr44/1360/2015/en/.

Bruch, Carl, et al., editors. Governance, Natural Resources and Post-Conflict Peacebuilding. Routledge, 2016.

Center for Strategic and International Studies. *Converging on the Coast: Violence Reduction in the Lake Chad Basin*. CSIS, June 2018, pp. 14–16.

https://www.csis.org/analysis/converging-coast

Counter-Insurgency and the Military Strategy in Nigeria's Northeast, 2018, p. 21 *Journal of Policy Development*, https://jopd.com.ng.

Dalby, Simon. "Environmental Security." Annual Review of Environment and Resources, vol. 46, 2021, pp. 481–505.

Etim, Effiong Ukorebi, and Mercy Ichiko Ola. "Assessment of Spatial Distribution of Lead in Soils Around an Active Military Shooting Range." *Ovidius University Annals of Chemistry*, vol. 35, no. 1, Jan. 2024, pp. 8-15. .https://doi.org/10.2478/auoc-2024-0002

Homer-Dixon, Thomas F. Environment, Scarcity, and Violence. Princeton UP, 1999.

Human Rights Watch. "Nigeria: Boko Haram Attacks Devastate Borno State." *Human Rights Watch*, 25 Mar. 2017, pp. 27-41 https://www.hrw.org/news/2015/03/25/nigeria-boko-haram-attacks-devastate-borno-state.

International Crisis Group. Facing the Challenge of the Islamic State in West Africa Province. Africa Report no. 273, May 2019, pp. 10–31. https://www.crisisgroup.org/africa/west-africa/nigeria/273-facing-challenge-islamic-state-west-africa-province.

International Organization for Migration. *Nigeria Displacement Report – Round 45*. IOM Nigeria, Mar. 2023, pp. 2–5. https://displacement.iom.int/reports/nigeria-displacement-report-45-march-2023.

Machlis, Gary E., and Thor Hanson. "Warfare Ecology." BioScience, vol. 58, no. 8, Sept. 2008, pp. 729–36, https://doi.org/10.1641/B580809.

Mahmood, Raoof, et al. "Analysis of Climate Variability, Trends, and Prediction in the Most Active Parts of the Lake Chad Basin, Africa." *Scientific Reports*, vol. 9, 2019, article 6317, https://doi.org/10.1038/s41598-019-42811-4.

Nagarajan, Chitra, et al. *Shoring Up Stability: Addressing Climate and Fragility Risks in the Lake Chad Region*. Adelphi, 2019.

Ochu, Esierebom, Esuk Nsidung and Base-side. *"Educational Counselling of Fisher Folks on Chemical Fishing in Henshaw Town Communities: Esuk, Nsidung and Base-side in Calabar, Cross-River State, Nigeria."* Journal of Survey in Fisheries Sciences, vol. 10, no. 1S, 2023, pp. 5769-5780.

Olaniyan, Azeez. "Once upon a Game Reserve: Sambisa and the Tragedy of a Forested Landscape." *Environment & Society Portal*, Spring 2018, pg. 19 https://www.environmentandsociety.org/arcadia/once-upon-game-reserve-sambisa-and-tragedy-forested-landscape

Operation Lafiya Dole Puts Enduring Peace Within Reach for Northeast Nigeria. *ADF Magazine*, vol. 11, no. 1, July 2015. *ADF Magazine*, https://adf-magazine.com/ADF-V11N1-English.pdf

Operation Lafiya Dole Troops Urged to Respect Human Rights. *Independent Nigeria*, 25 June 2018, pg 21-43 https://independent.ng/operation-lafiya-dole-troops-urged-to-respect-human-rights/.

Operation LAFIYA DOLE: Nigeria's Counterinsurgency Campaign. *Global Scientific Journal*, vol. 9, no. 5, May 2021, https://www.globalscientificjournal.com/r

esearchpaper/Operation-LAFIYA-DOLE-Nigeria-s-Counterinsurgency-Campaign.pdf.

Rufa'i, A. S. N. "The Impact of Boko Haram Insurgency on Water Supply in North-Eastern Nigeria." *IOSR Journal of Humanities and Social Science*, vol. 23, no. 5, May 2018, pp. 57–64. *IOSR Journals*, https://www.iosrjournals.org/iosr-jhss/papers/Vol.%2023%20Issue5/Version-7/I2305075764.pdf.

Solidarités International. *Assessment Report on WASH Infrastructure in Borno State.* Maiduguri, September 2016, pp. 2–4. *Solidarités International*, https://www.solidarites.org/en/.

Umar, Alamin. "From Elephants to Warthogs: The Shadow Wildlife Trade Financing Boko Haram in Nigeria." *HumAngle*, 30 Apr. 2025 pg.71, HumAngle Media, https://humanglemedia.com/from-elephants-to-warthogs-the-shadow-wildlife-trade-financing-boko-haram-in-nigeria/

UNICEF Nigeria. *Humanitarian Situation Report No. 1*. Abuja, UNICEF Nigeria, January 2017, p. 5. *UNICEF*, https://www.unicef.org/nigeria/reports/nigeria-humanitarian-situation-report-no1.

UNICEF. *Humanitarian Situation Report - North-East Nigeria*. UNICEF Nigeria, Dec. 2018, pp. 4–6. https://www.unicef.org/nigeria/reports/humanitarian-situation-report-north-east-nigeria-december-2018

United Nations High Commissioner for Refugees. *Nigeria Emergency: Operational Update*. UNHCR Nigeria, Mar. 2021, pp. 1–3. https://data.unhcr.org/en/documents/details/85714.

United Nations Office for the Coordination of Humanitarian Affairs. *North-East Nigeria: Humanitarian Dashboard, 2015–2021*. New York, UN OCHA, 2021. Pg. 21 *ReliefWeb*, https://reliefweb.int/report/nigeria/north-east-nigeria-humanitarian-dashboard

United Nations Office of the High Commissioner for Human Rights. "Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions — Addendum: Mission to Nigeria (27 February–6 March 2018)." United Nations General Assembly, 23 Aug. 2018, A/HRC/37/-54/Add.1, pp. 20–21.

U.S. Army and Marine Corps. The U.S. Army/Marine Corps Counterinsurgency Field Manual. U of Chicago P, 2007. (U.S. Army Field Manual no. 3-24 / Marine Corps Warfighting Publication no. 3-33.5).

Vivekananda, Janani, et al. Shoring Up Stability: Addressing Climate and Fragility Risks in the Lake Chad Region. Adelphi, 2019.