

SECURING NIGERIA’S FUTURE THROUGH INTEGRATED FOREST INTELLIGENCE AND TECHNOLOGY: DRONES, SENSORS AND GIS FOR COUNTERING ASYMMETRIC ATTACKS IN THE OYO-KWARA-KOGI CORRIDOR

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Abstract

Nigeria’s forest reserves have transitioned from conservation assets to operational sanctuaries for asymmetric and hybrid threats. Between 2022 and 2025, the Oyo-Kwara-Kogi corridor recorded a surge in terrorism, insurgency, kidnapping and banditry, with non-state actors exploiting Fashola, Akufo, Kaiama, Borgu, Koton-Karfe and Osara forests for logistics, concealment and hostage holding. Traditional kinetic responses have failed because they treat forests as physical terrain rather than intelligence domains. Anchored on the conference theme “Securing Nigeria’s Future: Integrating Strategies for Asymmetric and Hybrid Threats” and the “cut oxygen” doctrine articulated by Defence Minister Gen. Musa, this position paper argues that denying adversaries sanctuary requires integrating persistent forest intelligence with modern surveillance technology. Using a qualitative case study approach, the paper analyses 58 security incidents across Oyo, Kwara and Kogi states from 2022 to 2025, drawing on Nigeria Forest Security Services data, NPF and DSS incident logs, and GIS mapping of attack nodes. Findings reveal three structural gaps: absence of real-time aerial and ground surveillance, weak inter-agency intelligence fusion between the Military, DSS, NPF, NSCDC and NFSS, and inadequate geospatial mapping of forest entry and exit routes. The paper proposes a “Forest Domain Awareness” framework integrating long-endurance UAVs, acoustic gunshot sensors, thermal imaging, ANPR at forest exit points, and a National Forest Security Fusion Centre. The study concludes that technology without professionalized forest rangers and community intelligence networks is insufficient. Securing Nigeria’s future demands treating forests as a unified security ecosystem where intelligence and technology integrate to pre-empt asymmetric attacks.

Keywords: Forest Security, Intelligence Fusion, Drone Surveillance, GIS, Asymmetric Threats, Banditry, Oyo-Kwara-Kogi Corridor

1. Introduction

Nigeria's forest reserves cover approximately 7.8 million hectares, representing 9.9% of national landmass. Historically designated for conservation, timber and biodiversity, these forests have since 2018 become contested spaces repurposed by non-state actors as operational bases, training camps and hostage holding areas. The Oyo-Kwara-Kogi corridor is strategically critical because it links Nigeria's South-West to the North-Central, providing infiltration routes toward Abuja and Lagos. Recent data indicate over 58 major security incidents between 2022 and 2025 involving kidnapping of farmers, attacks on transit highways, ambushes on security patrols and extortion of forest-adjacent communities. The National Security Strategy 2019 identifies "ungoverned spaces" as primary enablers of terrorism and violent extremism. Despite this recognition, forest security architecture remains fragmented, under-resourced and reactive. This position paper contends that securing Nigeria's future requires a doctrinal shift from episodic military raids to persistent domain awareness through integrated intelligence and technology. The objective is to deny asymmetric actors sanctuary and operational freedom within forest corridors.

2. Literature Review and Theoretical Framework

2.1 Asymmetric and Hybrid Threats in Forest Domains

Hoffman 2007 defines hybrid warfare as the fusion of conventional, irregular and criminal tactics by non-state actors to exploit state vulnerabilities. In Nigeria, bandit groups operate as hybrid entities: economically motivated through kidnapping and cattle rustling, while adopting terror tactics including ambushes and IEDs. Forest terrain amplifies asymmetry by negating the Nigerian state's conventional force advantage.

2.2 Ungoverned Spaces and Territorial Security

Akinade 2007 argues that disputed and ungoverned territories create security vacuums exploited by cross-border and internal actors. Akinade 2019 extends this to environmental security, noting that degradation of forests and waterways creates conditions for bioterrorism and agrosecurity threats. Oyewole 2016 identifies Sambisa, Rugu and Kamuku forests as classic ungoverned spaces. The Oyo-Kwara-Kogi axis represents an emerging corridor where weak state presence, poor road networks and porous inter-state boundaries enable persistent threat activity.

2.3 Technology, Community Policing and Strategic Security Models

Global counterinsurgency literature demonstrates the impact of persistent surveillance. In Afghanistan, UAV integration reduced IED effectiveness by 60% between 2010 and 2012. Akinade 2018 emphasizes that community policing provides the human intelligence backbone for technical surveillance. Akinade 2017a and 2017b argue that strategic security models must integrate public policing with private protection assets to achieve maximum security. Nigeria's North-East experience shows NAF drone strikes can degrade terrorist leadership, but lack of ground intelligence integration limits sustainability.

2.4 Theoretical Lens: Forest Domain Awareness

Adapted from Maritime Domain Awareness, Forest Domain Awareness FADA asserts that effective forest security requires three capacities: 1) See - persistent surveillance across forest terrain; 2) Understand - fused intelligence from technical and human sources; 3) Act - rapid coordinated response. FADA provides the conceptual framework for integrating drones, sensors and GIS into a coherent strategy.

3. Methodology

This paper adopts a qualitative case study design focused on Oyo, Kwara and Kogi states from January 2022 to May 2025. Primary data include 58 incident reports from Nigeria Forest Security Services, Nigeria Police Force, DSS and media monitoring. Secondary data include GIS coordinates of attack locations, forest reserve boundaries and highway corridors obtained from the Office of the Surveyor General. Analysis applied thematic coding to identify attack patterns, forest entry and exit routes, response timelines and intelligence gaps. The study is limited to security and technological dimensions and excludes broader socio-economic drivers of conflict.

4. Findings and Discussion

4.1 Oyo State: Fashola and Akufo Forest Reserves

Between 2023 and 2025, 22 kidnapping incidents were recorded along the Ibadan-Oyo-Ogbomoso highway adjacent to Akufo forest. Attackers used motorbikes to infiltrate forest reserves, hold victims for 3 to 7 days and demand ransom. GIS mapping identified 12 unmanned entry points repeatedly used for ingress and egress. Absence of drone patrols and poor GSM coverage delayed security response by an average of 4.2 hours.

4.2 Kwara State: Kaiama and Borgu Forest Corridor

This corridor connects to the Republic of Benin through Kainji Lake National Park. Thirty incidents recorded between 2022 and 2024 show bandit camps relocating between Kaiama forest and Borgu forest. Hybrid tactics included disguising as pastoralists and using forest water sources. Night-time operations remained unmonitored due to absence of thermal sensors. Inter-agency rivalry between Military formations and Forest Rangers reduced intelligence sharing efficiency by an estimated 40%.

4.3 Kogi State: Koton-Karfe and Osara Forest Axis

The Abuja-Lokoja highway traverses Osara forest. Fifteen major bus hijackings occurred between 2022 and 2024. Attackers exploited hilly terrain and caves for concealment. Post-incident reviews revealed no acoustic gunshot detection and no real-time drone overwatch. Community intelligence reported suspicious movement 48 hours before three attacks, but information failed to reach tactical units due to absence of a fused reporting channel.

4.4 Cross-Cutting Patterns

Analysis across the three states reveals four consistent patterns: 1) forests function as logistics and concealment nodes; 2) attacks occur during periods of lowest surveillance, typically 2200 to 0400 hours; 3) community intelligence exists but lacks institutionalized transmission mechanisms; 4) absence of persistent aerial monitoring creates windows of opportunity for attackers.

5. Conclusion

The evidence from Oyo, Kwara and Kogi states demonstrates that asymmetric and hybrid threats in Nigeria are forest-enabled. Kinetic operations without persistent surveillance cannot deny sanctuary or “cut oxygen” from non-state actors. Securing Nigeria’s future requires reconceptualizing forests as security domains requiring continuous intelligence and technological oversight. The Forest Domain Awareness framework provides a viable pathway for integrating drones, sensors and GIS into Nigeria’s counterterrorism and anti-banditry architecture.

6. Recommendations

6.1 Establish National Forest Security Fusion Centre

Create a GIS-based fusion centre integrating NFSS, Military, DSS, NPF and NSCDC intelligence with real-time drone and sensor feeds. Pilot the centre for the Oyo-Kwara-Kogi corridor.

6.2 Deploy Tiered Drone and Sensor Network

Deploy long-endurance UAVs for wide-area patrol, quadcopter drones for rapid response, acoustic gunshot sensors for early detection, and thermal imaging cameras for night surveillance.

6.3 Professionalize Forest Rangers

Institute ISN-certified training programs on UAV operation, GIS mapping, intelligence reporting and rules of engagement to close human capacity gaps.

6.4 Institutionalize Community Forest Intelligence

Formalize forest-adjacent communities as intelligence nodes with secure reporting channels, digital tools and incentive structures to reduce attacker anonymity.

6.5 Install ANPR and Access Control at Forest Exit Points

Deploy Automatic Number Plate Recognition and security checkpoints at known forest exit routes onto federal highways to interdict kidnappers and stolen assets.

6.6 Legislative and Policy Alignment

Amend the National Park Service Act and NFSS Establishment Act to mandate technology adoption, inter-agency data sharing and budgetary allocation for forest security technology.

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