

Case Study

Terrorism, Counter-insurgency, and the Sambisa Forest: the Role of Military Geology in Fourth-Generation Warfare in Nigeria

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Abstract: This paper examines the endless militant and infantry wars in Northern Nigeria due to activities of insurgency, terrorism, and banditry. For more than a decade and counting, the Nigerian military had been disastrously engaged in hardcore fighting against an insurgent and terrorist group that had dominated northern Nigeria. Following a number of military operations involving Operation Lafiya Dole, Operation Hadin Kai, and the expenditure of hundreds of millions of dollars, the enemy forces had appeared invincible and was threatening to turn the war on insurgency and terrorism into a never-ending struggle in Nigeria. This is why the study adopts historical and qualitative approaches in investigating the firm resistance of terrorist and insurgent group in Sambisa Forest and its environs against the superior military might of the Nigerian Army. The study is that the Nigerian army has far more material and human resources than that of the insurgents and terrorists, but the failure of the Nigerian military to fully exploit the dynamics and benefits of military geology in the Sambisa Forest and its bordering areas has prevented a swift victory and led to an unintended protracted conflict in the region, very much like the war in Afghanistan. This paper advocates for an integrated strategy in the conduct of war in terrorism by the Nigerian military in the Sambisa Forest.

Keywords: Nigeria, Sambisa-Forest, Military-Geology, Insurgency, Terrorism

Introduction

After the extrajudicial killing of Boko Haram leader Muhammad Yusuf in 2009 at a Maiduguri prison, violence and terrorism in Northern Nigeria intensified. Nigerian Police reported that he was accused of attempting to escape, which led to his assassination.

President Goodluck Jonathan announced a state of emergency on May 14, 2013, in three North-Eastern states of Adamawa, Borno, and Yobe (Ikuomola, 2013). As far as our analysts and academics could see, unlike previous groups like Maitatsine and Shiite Islamists, Boko Haram had no limits in what they wished to accomplish. The bombers want to stay in this country, make a home here, and then pursue a political agenda, retired Director of Nigeria's National Intelligence Agency (NIA), Albert Horsfall told The Defense Post. We have fought a similar entity with – - force there before (Bassey, 2013). Related to this is the fact that the militants' today fortress is the Sambisa Forest. covering nearly 60,000 square kilometers in the northern part of Nigeria. The Sambisa is three times the size of Israel. It ranges from the northeastern Borno, Yobe, Bauchi and Gombe states to the northwestern Kano and down to Jigawa State which was made a game reserve by the British colonialists (Rafiu Ajakaye, 2014)

Neither Nigeria nor the forest has seen peace since it was claimed as a hideout by Boko Haram extremists in 2013, from which they strike at the Nigerian state. With no sign of success, the Nigerian Army has maintained the offensive operations to root out the last Boko Haram terrorist camps/settlements in the Alagarno and Sambisa forest region. One might be forgiven for asking, on learning that Boko Haram's base in Nigeria is the Sambisa Forest, what prevents the military from simply burning the rebels out of their lairs and ending their long reign of terror in the region (Rafiu Ajakaye, 2014). While authors have highlighted the socio-economic, socio-political and socio-cultural impact of the Boko Haram insurgency (Aju & Aju, 2018), the military geological ecology of the ecological feature which rendered difficult for the Nigerian military to end the Boko Haram insurgency has not been intellectually scrutinized or examined. It was against this background that this work made use of qualitative and secondary research methods, secondary sources of data such as the internet, textbooks, newspapers, journals, and recorded data to the effect to uncover and enable an understanding of Nigeria's endless military campaigns against insurgents in the Sambisa Forest, considering the role and dynamics of military geology in the war against insurgency and terrorism in Nigeria.

Boko Haram's philosophy and history stretches a lot farther back in time than what most media, writers, and experts who peg the start of BH as somewhere around 2002 have suggested, says Loannis Mantzikos (2013). Security forces in Nigeria, however, consider the Ahlulsunna wal'jama'ah hijra or Shabaab group (Muslim Youth Organization) as established by Abubakar Lawan in Maduigiri, Borno State, in 1995. The peaceful movement flourished until an insurgent leader named Mohammed Yusuf emerged as head of the sect in 2002. The group has evolved over time, at times also being referred to as the Nigerian Taliban, Muhajirun, Yusufiyyah sect and now BH Sudan (in a twist it appears circumstantial BH is merging with ISIS). Jama'atu Ahlissunnah Lidda'awati walwajhati wal jaahid ("People committed to the propagation of the Prophet's Teachings and Jihad") is the name by which the group is much more comfortable. Back in BH, the weaknesses of Islam lay in western page, especially Western education. Its ideology is grounded in Salafi jihadism and Takfirism. Salafism, for instance, seeks to salvage Islam from its alleged contamination by unjust sources of modernity – and from the 'pious

progenitors' of Islam, Muhammad and the early Islamic community – it reconciles itself with these origins by blanking out their historical and social context, which initially was his way of talking about very 'foreign' things. One manifestation of Salafism which advocates violence to bring about such basic change is known as Salafist Jihadism. Takfirism like the Salafi Jihadi doctrinal strains, is referred in Mantzikos (2010). The concept of takfir, the charge of heresy, and the use of that charge for takfirism have all been drawn from the Arabic term takfir if this designates an action or person as an Islamic act. According to Madike (2011), Takfirism labels all adherents of other religions as infidels (kafirs) and urges its followers to leave the current Muslim society, go to remote areas, and combat all Muslim unbelievers. As Adibe (2011) writes, Boko Haram's followers are motivated by the conviction that the Nigerian state is replete with so social vices and the most righteous Muslim's best option is to "emigrate" from the corrupt society and go to a faraway land to found an ideal Islamic society devoid of political corruption and moral obscurantism. Non-members were hence considered as kuffar (those who reject the truth) or fasiqun (wrongdoers) by Alonge A. (2012), thereby making them fair game for persecution. Its political objective is to destabilize the Nigerian democratic regime to impose its own definition of Islamic sharia upon the country.

Bodansky,1992:147; Asfura-Heim and Mc-Quaid, 1999) in the immediate wake of the death of not only its founder It began its insurrection in Kanema, a village in Yobe State consistent with its broader ambition to oust the secular government and form an Islamic State (Dawla Islamiya). Mohammed Yusuf, the founder, built a mosque and training center in the region for his adherents, who were originally known as the Nigerian Taliban. There he created religious police, a huge farm, and fighters to conscript. After the organization's bomb attacks against government facilities, which included the Local Government Secretariat, the Government Lodge and a police station in Damaturu, Yobe State, as well as in Bama and Gwoza, Borno State, the army responded with a crackdown on the group. The camp of Yusuf was raided by the authorities in October 2003; he escaped to Saudi Arabia and those loyal to him fled to Mandara Mountain on the Nigerian-Cameroon border (Kassim, 2018). In the aftermath, the group reportedly disappeared as many of its members went into exile, returning six years later (Onuoha, 2015). The organization brainwashes fighters recruited combatants who are thereafter radicalized through the stoke of fear, hypnosis and ideological psychic conversion in voluntary companionship, forced infection, jailbreaks, lure, and kidnapping. ISWAP boasted anywhere from 15,000 to 30,000 fighters, with 6,000 being foreign fighters from other African nations who had come back to the Sahel to continue the jihadist battle after having established the Islamic State in Iraq and Syria (Omenma, 2019). Its activities are financed by donations from the local actors (politicians and sympathizers) and foreign ones, a membership fee, and the proceeds of criminal activities such as cattle rustling, kidnapping for ransom, and the extortion of citizens (Mahmood & Ani, 2018). Boko Haram was among the beneficiaries of the US\$ 3 million paid by Osama bin Laden's Al-Qaeda to groups that supported his cause in 2002, and US\$250,000 in supplies came from Al-Qa'ida in the Lands of the Islamic Maghreb (AQIM) in 2012 (Cocks, 2014; Igwe, 2021; McCoy, 2014).

After their comeback in 2009, they adapted, reinvented and reoriented toward asymmetric warfare. Since they were operating nonstop, the United States had to designate them as a "Global Terrorist Organization" in 2013. (Campbell, 2013). On two occasions before the declaration, in 2010 (Pham, 2016) and in 2014, the group also succeeded in breaking out of Bauchi Prison. IEDs and booby-trapped suicide bombers (young boys and girls), who took lives, made them more deadly (Weeraratne, 2017). A Norwegian think-tank, Action on Armed Violence, states that the group was responsible for 15 IED detonations including 25 suicides between January and March 2017 (Gana et al, 2018). In addition to RPG-7 Rocket Launchers, machine guns and rocket & artillery, AK-47 (Kalashnikov) assault rifles, machetes and simple wooden sticks, mainly stolen from Nigerian and Camerounian military, light motorized infantry (gun pick up Toyota Hilux vehicles, unarmed technical and light armored infantry/ improvised fighting vehicle, main battle tanks,), armored personnel carriers (APCS IED armed ones) and 4 X 4 pick up trucks (Omeni, 2018). But there are many guns of theirs that aren't obtained locally or from the security forces, several lines of inquiries found that a significant amount of their hardware was acquired from Libya's weapon store when the Gaddafi regime was forcibly removed (Hassan, 2021). The group's selected strategy was to use pregnant women as the cover for suicide bombers. They split their operations into two wings: the overt one, comprised of civilian males of military age who had been trained in soldiering and basic infantry tactics, and the covert (combat roles), which was an anomaly, but consisted of women who were younger than the men involved (Warner & Matfess, 2017). Through emphasis on guerrilla warfare and denying the army the ability to establish a presence, the group can counter-act the military's COIN strategy with two fronts operating in a coordinated fashion. The overt front is activated whenever battlefield conditions permit a territorially-expansive strategy. It was its modus operandi from 2010 to 2013 and part of 2014, before it was succeeded by the deployment of more task force battalions in 2015. (Omeni, 2018). Forests, grasslands, deserts, and marshes provide varying logistical and vulnerability options to governments, according to Mountjoy (1987) who are supplied by the following values. Governments are supplied by the following values. Forests, grasslands, deserts, and marshes offer different logistical and vulnerability possibilities for governments (Mountjoy, 1987). Defense is said to be more aided by trees and offense by open ground by this author. During the USA-Vietnam War in the 1960s and 1970s, the Vietnamese realized this and used their rainforest tactically.

Although the US army defoliated about 16,200 km² of the Vietnamese forest, the Vietnamese employed hit and run (disappear in the bush) to defeat the most powerful, well-equipped US soldiers. In contrast, Umar and Naibbi (2015) argue that the French and African Union forces were able to readily track and destroy the Tuareg rebels' armored vehicles in the Azawad region of Mali in 2013. At the time, the Tuareg rebels had cut off Northern Mali. Comparable advantages were marveled by over 24 armed groups who have existed in the Democratic Republic of Congo (DRC), since it achieved independence in 1960. Elevations, Flat Grounds, and Depressions are the most important crags and topographic features suitable for military use, according to Umar and Naobbi. One of these

the most, topographical features used for military purposes within the context of Umar and Naobbi is local land utilizes of Elevations, Flat Grounds And Depressions. These attributes are particularly influential in determining the ability of air and ground forces to maneuver freely, detect targets, provide fire support, conduct non-kinetic operations, coordinate activities, and receive necessary support at the strategic, operational and tactical levels of combat operation. Adhikari (2012) noted the apparent significant understanding of mountain strategy across the three countries located along the Indo-Pakistan-China border in the Karakoram Range. Because of their elevation, low-intensity attacks on the enemy are promoted by the mountains. These three countries, after Mount Everest are racing to capture land near HIMALAYA's highest point. China occupied the northern and eastern portions of Ladakh in Aksai Chin, and Pakistan occupied K2, the second-highest point on the planet. But although the Indians held Srinagar, the region's largest city, confidence was still frail because the Pakistanis and Chinese possessed land at higher elevations. This affects the 1999 Kargil War, where a weaker India was bested by Pakistan. Above all, China is exporting more arms to these regions to implement its regional agenda. Adhikari (Adhikari, 2012, p. 156) states that China enjoys a direct access to Indian Ocean now, which Russia has been long denied due to India's implicit control over the Karakoram route via Gilgit in the occupied part of Kashmir. Collins (1998) states the following concerning geography, military operations, and knowledge, "Geography still has and will have a tremendous impact on military operations, war, and security as we found throughout our history. "In the next wars, knowledge may be better than ground." Topographical, meteorological, and environmental variables affect war and the backup plans of taken, so do great commanders of the past and the current. The truth behind this is that history has always been riddled with scenarios where those who gave insufficient thought to geography got devastated. . Following is a list of the geographical elements of significant military importance:

Table 1: Geographic factors affecting military operations

Physical Factors	Cultural Factors
Spatial Relationship	Racial and Ethnic Roots
Topography and Drainage	Population Patterns
Geology and Soils	Social Structures
Vegetation	Languages and Religions
Oceans and Seashores	Industries and Land Use
Weather and Climate	Transportation Networks
Daylight and Darkness	Telecommunications
Gravity and Magnetism	Military Installations

Adapted from Collins (1998, p. 4)

The military and their intelligence consider a place to be strategically significant if they can pin point the correct location which can help them to protect their country. By contrast, according to Adhikari (2012), strategy is the “art of employing power,” however in geostrategy, it is the application of power to gain the maximum level of control over the entire domain. Accordingly, strategic points are those which permit the military or their enemy to realize any advantage in effectuating their mission. Some earlier works focused on the evolution of the Boko Haram insurgency, while others highlighted the role and successes of the military in terminating the insurgency in Nigeria. Some earlier works have employed geography to study (in military terms) how geography influences the operation of war at large. In spite of all this, there is still a gap in the literature which this research would seek to fill. Currently, there appears to be an absence or at least a gap in the literature on the place of military geology in the COIN operations in Nigeria. This study intends to address that gap.

Theoretical Framework

War is and has always been the centerpiece of Clausewitz’s theory of the state. What makes this theory unusual is that it relates to conflict and military planning to using information in a battlefield of the 21st century. Clausewitz was well versed in tactical as well as strategic war. Clausewitz was a learned officer and not simply yet another ghazal-writing military dilettante, as it is popularly held opinion that he was too theoretically minded to be of any practical use for the military (Hartmann, 2001).

Due to his unique background in war as well as diplomacy, Clausewitz saw the importance of the theoretical and philosophical as being crucial to understanding war. Clausewitz was a well-experienced military man. Entre Moscou e Paris, ele participou em cinco guerras diferentes em vários teatros de operações. Before he was thirteen years old, in 1793, Clausewitz fought as an officer candidate in the allied campaign against the French Revolution and engaged in his first action (Paret, 1991). Clausewitz (1976, rev. 1984) argued that a war is only a duel on a larger stage. It is true that war consists of numerous different duels, but if we observe two wrestlers, we can understand it as a whole. Each is seeking to exert his bodily will upon the other and there is nothing more immediate in their joint purpose than to give each other a toss, after which neither can be expected to resist.

We wage war to make our adversary bow to our will. Clausewitz does not purport to suggest by way of the metaphor of a duel that the use of great military power is the defining feature of war. It would have been entirely irrelevant. On the contrary, it rests upon the warlike wills of the separate enemies and the prospect that those warring wills may be able to assert themselves in certain ways. Hence, Clausewitz considers the choice of ends and the availability of violence to realize these ends the conceptual essence of war and strategy. That, in many cases, would mean seeing the opponent as an intellectual adversary who does, or could do, have preferences and options in front of him, but who also has constraints. To think of war as an act of violence in its pure form, one has to approach peace in armistice as the resolution of war. Hence, the predicted peace must be perpetually taken into account when making a strategy. This is “principle” of thinking is

backed up by two reasons. First, in planning by the stances of hermeneutics and dialectics, a holistic intellectual process is involved, which is completed reflecting ultimate action (peace in this case) even before undertaking initial step (war in this case). Second, the influence of the aim of peace on the formulation of strategy comes naturally because of the nature of conflicts whose “immediate purpose” is to “fling his opponent in such a way as to make him helpless, not for wrestling any more.”

Hence, the necessity of considering the enemy's readiness to share in a future peace order when contemplating its imposition comes into focus in planning. Clausewitz: 'Strategy is the use of battle for the purpose of war'. Military commanders must convert political aims from politicians into military ends that can serve as the military strategic planning foundation of military strategy. Thus, the more uncertain policy is, its objectives fleeting, or it constrains the military implication of the war in a manner that limits the generation of adequate strategic effect to realize victory, the more strategic planning will deteriorate. The strategic result will depend on how effective the operations and tactics are. Clausewitz maintains that in order to achieve the military objective, one needs both the ability to conduct and to organise wars. If the goal is just to show that you have a military capability, this strategy is probably only viable if the enemy believes the forces you have deployed are actually capable of fighting. Another limitation Clausewitz introduces is that at the level of military strategy, planning is developed from a point below the political and above the tactical levels. Therefore, strategy is a balancing of tactical means and political ends. Poor strategic direction might be not enough to achieve even long string of good tactical success in performing political aims. On the other hand, with no tactical successes, even the best plan will be unable to achieve its goals.

Conceptual Clarifications

Fourth Generation Warfare (4GW)

This fighting, involving military, paramilitary, and civilian forces on one side against armed groups on the other, is also labelled as the war on the guerrilla, ambiguous warfare, hybrid war, stability operation, irregular warfare, or counterinsurgency/counterterrorism. Conventional military units are waging these military campaigns against non-traditional armed groups (Osakwe & Audu, 2017). These include names like the war of the US in Afghanistan against the Taliban and Al-Qaeda, the Kenyan and Somali governments' military offensives against Al Shabaab, the US war in Iraq and Syria versus ISIS, the Nigerian and Ethiopian governments' military offensives against the Tigras etc. Whereas symmetrical conflicts are more often fought between States, those aren't the kind of military activity (Osakwe & Audu, 2017). Since then, straightforward wars have become uncommon and have been replaced by wars of uncertainty. Even though these battles were fought on the periphery of the world, somewhere between India and China, this is a classic example of such conflicts as the Eritrea and Ethiopia conflicts just ramming at the turn of the twenty-first century or such as the Iran and Iraq war in the eighties, and Argentina versus Great Britain wars over the Falkland/Malvinas Islands were. Due to the “complex character” of the conflict, the nature of its participants continually

evolves, the strategic and operational environment is frequently changed, and confronting insurgents, terrorists and other armed entities in these battles is characterized by limitations and difficulties (Osakwe & Audu, 2017).

Asymmetric warfare, which can be difficult to understand in its own right, is for example defined as “the unexpected or unconventional use of power to exploit the vulnerabilities of a stronger adversary through the use of new technologies or new methodologies” by the Joint Chiefs of Staff of the U. S. (Osakwe & Audu, 2015). Perhaps one could also consider high-level military operations as a “war between two sides in which one side has resources that are fundamentally different from the other side, and they vie to take advantage of the differences between their strengths and weaknesses” when viewed in light of the fact that they engage with each other. These battles often exhibit unconventional tactics and form of warfare, as the weaker forces attempt to apply strategy to offset discrepancies in quality or quantity. It is a term which is commonly used in official and unofficial publications and often replaces terms such as “insurgency”, “terrorism”, “guerrilla warfare”, “low intensity conflict”, “counter insurgency”, “counter terrorism”, “essentially violent conflict between a regular military and irregular antagonist” and more recently, “war of bliminality” (Osakwe & Audu, 2015). These types of conflicts have grown and changed new types. Is it said techniques Lore however are But Very Many not Although Ingested: Few of the techniques used are novel, despite the fact that it is not. Like I said, the new enemy has game complexity because they constantly cheat, while traditional armies execute their military operations in line with national laws, international treaties and rules of engagement. Regular military such as the Nigerian military is unable to predict the exact nature, place or duration of these wars because of these armed groups. This can be attributed to the continually changing coalitions, alliances, partnerships and players of the operational environment within this context. Thus, it is only an utterly professional military that can counter this hybrid threat.

The Sambisa Forest

The geographical nature of the Sambisa forest cannot be described without reference to the Lake Chadians It is from the This is the Lake Chad that covers the sambisa Forest;a forest in borro state,nerth east nigeria which is pretendely the headquarters of the Boko haransect. The Sambisa forest lies at the northing- east tip of the southwest corner of the Sahel Acacia Savanna within the western boundary of the Sahel zone and also at the southern edge of the Sahel Savannah, about 60 km It Is located about 60 km south east of Maiduguri, as a regional city for the state of Borno Bashir Abubakar.The forest itself is a combination of, woodland,obviously very dense woodlands.

Photo of Sambisa Forest.



Source: Investigative Journalism and Geospatial Media.

It covers an area of about 60,000 square kilometres in Borno, Yobe, Gombe, Bauchi along the corridor Darazo, Jigawa, and some parts of Kano state farther north. Sambisa is three times larger than Israel. Defined as a game reserve by the British colonialists, it spans from the northeastern states of Borno, Yobe, Bauchi, Gombe to the northwestern region of Kano and juts into Jigawa State (Rafiu Ajakaye, 2014). It is divided between the Nigerian Local government areas of Askira/Uba in the south, Damboa in the southwest, and Konduga and Jere in the west. The name of the forest is derived from the village of Sambisa, which lies on the border with Gwoza in the East. The Gwoza hills to the East boast peaks as high as 1,300 metres above sea level and are an extension of the Mandara Mountains which run across the Cameroon-Nigeria border. Seasoned by seasonal streams, the forest empties into the Yedseram and Ngadda Rivers (Kayode B 2015). 4 The Lake Chad Basin By reason of its geographic positioning, lay on the borderline between the Sahel, and Sub-equatorial Africa; between Central and West Africa. Formerly a great lake, the lake is now shared by Nigeria, Cameroon, Chad and Niger. It is due to this advantageous position along the trade routes that the British colonial government selected Maiduguri as the capital of Borno state in Nigeria, in 1900 (Kayode B 2015). These days, the city is known as the original stronghold of the Islamist sect Boko Haram, and the stage of a brutal battle against the group by the Nigerian army. More significantly in terms of this study, Maiduguri lies within an insecurity triangle that includes Maroua (Northern Cameroon) and Ndjamena, the capital of Chad (around 30,000 sq km) (Owono J 2015).

Nigerian Military Onslaught on Terrorism and Counterinsurgency Operations

In all insurgent scenarios, the state reacts with appropriate measures – conventional and unconventional, mind you – often labeled as counterinsurgency (COIN), designed to pursue a series of national security interests. From US Army-Marine Corps Counterinsurgency (COIN) Field Manual (FM 3-24), COIN is a “synchronised application

of military, paramilitary, political, economic, psychological and social actions taken to defeat insurgency” (David & James, 2006). In other words, it is the inversion of insurgency and it subsumes socio-political, legal, bio-physiological, security activities that are legitimately and religiously executed by the state to condemn the modus operandi of insurgency, restore stability, develop public order and consolidate the state’s legitimacy. It seeks to sustain adequate security presence, protect lives and properties in the zone of conflict, as well as ensure public order and progress while slaughtering an enemy and its facilities, structures and troops (Oyewole, 2016). Since in its proactive and reactive nature it encompasses the means of national power, the state’s forces and their partners endeavor to annihilate an armed adversary, diminish passive opposition, enhance interagency cooperation and legitimize the state (Akanni, 2019). Key elements include strategic planning, facilities, equipment, funding, intelligence collection and analysis, infrastructural and organisational issues support, among others. Countering (destroying) insurgency, builds its support among the people. As a result, the state controls the environment, pacing of events, security forces and (the impacted) communities, all of which shape the desire to visualize counterinsurgency. Within this framework, the specificities of the COIN campaign are based on the characteristics of the environment (the theatre of operations), in socio-economical, physical, geographical and human terms, the nature of the insurgent group and the state and its institutions. However for success in COIN operations to be attained, there must be accommodation of the dynamics that are unique to the insurgency. Besides this, the state must respect the rule of law and the rules of engagement and not contribute to exacerbating an already volatile situation.

The war on COIN in Nigeria has been mostly kinetic warfare for years while the COIN crusade employed its use of force to crush the Boko Haram insurgents. 2) Air and Land operations (Air Force/Army combined) are substantially enemy-centric which focus, or strive to focus, on the following intents:

- a. Shield the civilian population.
- b. Defeat/exterminate the insurgents.
- c. To take control of the Sambisa forest and the lost territories.
- d. to capture or kill Boko Haram’s head.
- e. to eradicate Boko Haram and its remnants (Doukhan, 2015).

Besides the above-mentioned, the police and the army also collaborate on road blocks, stop and search at checkpoints, raid on suspected insurgent hideout, gun duel, open confrontation and mass arrest. Prior to full military intervention with different operative codes names (see below in table 1), the police has been involved in arrest, detentions among others policing measures. Then came Operation Flush in 2009 followed by Operation Restore Order in 2011. In line with this, in 2011, a Special Joint Military Task Force (SJMTF), consisting of the Nigerian Army, Nigerian Air Force, Nigerian Navy, Nigeria Police Force, the Department of State Security, the Nigerian Immigration Service, and the Defence Intelligence Agency and led by Major-General John Ewanshia was established (Vanguard, 2011) to allow for unimpeded flow of information and sharing of criminal intelligence without compromising the autonomy of any agency fighting Boko

Haram. In an effort to secure victory in the military campaign, a state of emergency was imposed in three northeastern states – Borno, Yobe and Adamawa – in 2013 (Omenma et al, 2020). By law, emergency power is the power to bring into play the coercive machinery of the state, which almost is always the president, with the endorsement of the legislature to deal with a serious security problem which in its holder's reasonable opinion is not amenable to be handled by an ordinary law (Section 305 of 1999 Constitution). This power allows the security agents to arrest and detain the suspect and take over any premise suspected of supporting the insurgents. In effect, with the operational directive to cripple Boko Haram's ability to plant explosive IEDs was implemented and replaced with Operation Zaman Lafiya (i.e. Live in Peace) with the same responsibility said directive. Operation Restore Order 1 was carried out and upgraded to Operation Restore Order II and III with the aim to restore public order in Bauchi and Yobe State.

On the economic front the government increased the budgetary provision for the defence and security by 100 % from 2009 to 2013 (Odo, 2015) with the expectation of high military spending for buying of arms. This placed the nation at the 6th position in all of Africa and 57th globally in the chart of military spending (Abdulazeez, 2016). The rise of Muhammadu Buhari as the 4th democratically elected president since the return of democracy in 1999 gave the war against terror a positive directional focus. As he had run as a candidate who would combat insurgency, curtail institutional corruption, and stimulate the economy, the administration made some bold moves to fuel COIN operations. Among other measures, the appointment of new security chiefs to reinvigorate the state's efforts, the diplomatic visit to Lake Chad riparian states as soon as he ascended the office, the gathering with G7 leaders in June and a subsequent meeting with President Barack Obama of United States of America in Washington on July 14 and President François Hollande of France in Paris on 14 September, all in the year 2015 to garner for international support (Onuoha & George, 2016).

Table 2: Illustration of the Military Operations

Year	Code Name	Description
2011	Operation Restore Order I	Restoration of law and order in the north-east and Borno state in particular.
2011	Operation Restore Order II / III	Provision security for the locals against Boko Haram in Bauchi and Yobe.
2013	Operation Boyona	Damage of insurgents' camps and their incapacitation in communicating regrouping and reinforcing, arrest culprits and bringing them to justice.
2013	Operation ZamanLafiya	Same with Operation Boyona.
2015	Operation Gama Aiki	Clearance of remains of Boko Haram from Northern Borno and the border regions with Chad and Niger.
2015	Operation Lafiya Dole	Decimation of many Boko Haram insurgents, their arrest, freeing of abducted hostages and discovery of bomb production factories.
2016	Operation Crackdown	Decimation of weaponry and capacity of Boko Haram.
2016	Operation Rescue Finale	Conquest of Boko Haram in Sambisa Forest.
2017	Operation Deep Punch	Clearance of Boko Haram's remnants from Sambisa forest and restoration of order in the northeast.
2018	Operation Last Hold	Exhibition of military combat efficiency, complete damage of Boko Haram insurgents locations in the Lake Chad, clearance of the Lake Chad water ways, obliteration of insurgents' terrorist camps & strong points in the Lake Chad basin, facilitation of rescue operation of hostages, restoration of economic activities & relocation of IDPs back to their communities.
2021	Operation Tuka Takaibango	Boosting of Operation Lafiya Dole, tackling of the emerging threats of Boko Haram and ISWAP, their renewed violence and enclaves.

Adapted from Oladimeji Shodunke, 2021

He also ordered the disbursement of US\$21 million out of the US\$100 million pledged for the functioning of the MNJTF to be disbursed among 25,000 troops (Odunsi, 2015). When the insurgency grew in strength, the military intensified its COIN operations with more operations. Operation Ruwan Wuta II, Operation Gama Aiki, Operation Deep Punch I and II and Operation Last Hold. Operation Lafiya Dole was established under Theatre Command North East in 2015 and currently, Infantry Divisions 7, 3 and 8 of the Nigerian Army are directing the Tanzanians (Omenma et al, 2020). The size of the (army, airforce and navy) fighting against the insurgency had increased to 100,000 by 2015 (Raphael & James, 2016); it used to be approximately 36,000 for the years 2009-2011. "Now the esprit de corps is to finish them off," said Brigadier-General Victor Ezugwu, when describing the Army ground offensive. The Nigerian Air Force (NAF) has been the aerial arm of the military in dislodging the insurgents with ground forces and has been supportive in airpower to obliterate the insurgents' hideouts, communication centers, remnants, IED production yard and other enablement factors of the Boko Haram – along with the Nigerian Army. Since 2013 it has conducted thousands of airstrikes and operations

against the insurgents and has increased its cooperation in COIN multi-agencies activities (Today, 2015). A total of 5,390 operational sorties have been flown, consisting of 2,648 for ground attack, 1,479 for airlift, and 1,443 for ISR, it has conducted 1,488 airstrikes against the insurgents (Peacock, 2015 ; Premium Times, 2017). Thus, NAF could boast of some successes in the COIN theatre – the NAF-Army joint operations in march 2014 in Sambisa Forest killing hundreds of insurgents, the repel of Boko Haram attacks in Konduga in December 2014, the recapture of territories from the insurgents with airstrikes (the battle of Gwoza) in March 2014, the bombardment of the insurgents' hideouts in October 2017 resulting to the death of many terrorists in Urga, Borno among other triumphs (Oyewole, 2016 ; Soriwei, 2014). Equally, the country was said to have procured arms from the United States, Czech Republic, Russia, China (via supply of drones and five combat helicopters) France, Israel, Norway, Canada, South Africa, Ukraine and Germany and signed a Memorandum of Understanding (MoU) with 17 countries for military cooperation, (Amnesty International, 2015b). In 2011, Israel and Italy trained 6,000 and 340 of its security personnel respectively in various counterinsurgency techniques, the U.S., has been leading the COIN charge as a bilateral partner in the training of Nigerian soldiers, providing funding, logistics and criminal intelligence from its Federal Bureau of Investigation (Oyewole, 2015). In 2014, France responded to the Lake Chad nations call by extending military assistance (Operation Barkane in Chad and Mali) as well as undertaking reconnaissance flight on Nigerian borderlands on the representation of other members states (Griffin, 2016).

Military Geology: Dislodging and winning the war on terrorism and Insurgency in the Sambisa Forest and its Environs

Military use of geology has a history dating back at least as far as Napoleon who took geologists with his expeditionary force during his invasion of Egypt in 1798 narrated by George Kiersch and James Underwood (1998) and more during 18,19 and 20th – military geology matured into 'terrain intelligence' calculus more about terra firma than anything else, of extracting simple, pragmatic understanding useful in matters of troop and vehicle movement; route access; finding staging enhancers and construction materials; soilguard/terrain stability and rock excavation properties and drainage and surface/subsurface water/with hydrogeology. The military geology was developed as good science by Second World War. There is more detail about the United States Geological Survey (USGS) Military Geology Unit that was created in 1942 and ended up with more than 250 geologists and other professionals who were dedicated to producing terrain intelligence; examining how well vehicle and troop could traverse land; locating water, fuel and mineral resources; locating building materials and dealing with building challenges and airfield location (Joel Roskinm, 2020).

With regard to military operations, geology has been applied in the following fields:

1. Terrain intelligence
2. Geoforensic

3. Underground opening
4. Aquifer geology and hydrology

Terrain intelligence or terrain analysis is the study of the effects of natural and artificial features of the Earth's surface on military operations in a designated area. This also includes the effects of the weather and climate on those features (Dictionary of US Army Term, 1953). Such an application of AO research was pioneered by a French military geographer (Marga 1884-85). A similar procedure was established by a geologist appointed to the American expeditionary force in World War 1 (Bryan, 1920). It has been widely accepted the following intelligence levels are appropriate (Whitmore, 1954), they are Strategic intelligence; Operational intelligence and Field intelligence. The range of strategic intelligence report map scale is from 1:100,000 or less and up to sub-continental area.

Operational intelligence with the usual map scale of 1:250,000 or less for preparing plans of military operations and for in filling intelligence when an operation is executed. These intelligence reports are generally utilized at the field army level. The third and most comprehensive, is the field intelligence. This encompasses the activities such as location of water supplies, selection of quarry site, search for sources of gravel and on spot advice on road construction, maintenance, drainage and the inspection on of site that earned by strategic intelligence as suitable for airfield and underground installation. Bob Whisonant (2017) has analyzed the 25 bloodiest battles of the civil war through the lens of terrain application warfare and concluded that in some of those battles the number of casualties suffered may have been influenced as much by the earth the soldiers stood on, as by the bullets that were flying through the air. Whisonant and ex U.S Army terrain analyst Judy Ehlen conducted an analysis of the geomorphology at multiple battle sites and matched the terrain with documented casualties for each day of fighting. At a more fundamental level, the two researchers found evidence soldiers were actually in greater danger in certain battle places because of the geological forms beneath the battlefield.

Whisonant(2017) also analyzed the situation at Antietamwhere, on September 17, 1862, the bloodiest day in the civil war, between 20,000 and 23,100 soldiers were killed, wounded or missing in action. "What is so striking at Antietam is that two geologic units underlie that area, Whisonant said "One is very pure limestone that as it erode, it literally melts. Mostly what you get with that is a very even, level, open surface.... There just aren't too many deep holes and high hills that provide soldiers a place to hide." In one section of this flat terrain — called Miller's Cornfield — "armies just shot each other to pieces as exhaustion took hold. "Fewer relative casualties near Burnside's Bridge may be due in part to the harder, dolomite rock beneath that section of battlefield." "It tends to have more rugged, broken terrain," Whisonant explained". "There are gullies and ravines slicing it up into a series of deeper trenches that the troops can use for cover and higher hills presenting even greater superiority and a more favorable line of fire. Geoforensics is defined as the application of geoscience know-how in solving a variety of earth and ocean related mysteries. There have been a number of known instances when forensic science played critical part intelligence, security and military operation. This was distinctive, in

their own analysis of a rock outcrop they spotted in real time on Videotape where he once appeared, as soon as his location was discovered he subsequently used black clothes to cover his background.

The underlying role of geology in recent times is especially evident as our enemies have gone underground, the military require geoforensic experts in-situ and nature of caves, analysis of underground work and the vulnerability of tunnel entrance to conventional and penetrating bombs.

Underground military installations are often designed to make use of topography, geology depth, and hardness as barriers. The military gathers geologic intelligence, such as the bedrock geology and weathering and soil formation, rock strength, rock mass strength, intact mechanical properties as well as information regarding how projectiles penetrate rock. A geologist may study the characteristics of a rock in the laboratory and from that infer how those characteristics might change during different weathering scenarios. The remote sensing is applied for detection and characterization of foreign underground facility. Hydrogeology is that portion of the science which deals with water and with those of its properties, phenomena, and the other related things which are observables over the exterior of the earth, has military application because Water Army can be considered a method by which one can predict the traits of moving water. Water is one of the most frequently employed substances used to create a barrier during war, and many cases are chronicled in military history. This operation demonstrates the strategic value of demolishing water control structures to disrupt the enemy's war economy. A classic example is the British bombing of the Moehne and Eder dams in Germany in 1943.

As with other science-based disciplines, military geology will continue to benefit from technological advances such as remote-sensing tools, technologies to locate, analyze, and test materials. Meanwhile, advances in underground engineering technology have made it possible to design and build deeper and more complicated underground facilities, which are challenging to 'hold at risk'. Such advances as of concealment and deception have significantly complicated the task of detection and identification of foreign subterranean construction site.

Conclusion

In the final analysis, this work focuses on the challenges militancy geology posed to terrorism and counterinsurgency in the Sambizzar forest. In general, this paper contends that despite the fact that the Nigerian army had better material and human resources compared to that of the insurgents and terrorist, its failure to harness the potentials and benefits of Military geology in the Sambisa forest and by implication its surrounding stretches had stymied a quick defeat and led to an unplanned battery in the region. The paper also argue that Terrain intelligence or terrain analysis is useful in assessing the impact of the natural and artificial characteristics on military operation.

Recommendations

The geology of the soil has been certainly been applicable in the armies of the United States, Great Britain, Germany and Russia. Nigerian military can fully apply geology in their fight against terrorism that is devastating the country, if so the Boko Haram onslaught leading to the loss of lives of untold thousands will soon be a thing of the past. In order to realise this:

1. Geology as a discipline should be taught in the Nigerian Defense Academy (NDA) at the degree level as a course.
2. All military institutions in Nigeria, like the Command and Staff College, National Defense College, viz, should have a geologist specialist to teach, such as terrain analysis, remote sensing, geoforensic, etc.
3. The Nigerian Geological Survey and the military should collaborate to provide a detailed geology of the terrorist zone in the country for the Nigerian military to use to fight insurgency like Boko Haram.
4. The Federal Government should provide funds for extensive national geology studies.
5. Military geology should be established as a unit in the Nigerian Army.

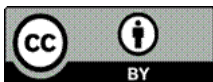
To enable our armed forces in Nigeria to perform well and for their good military training, the inclusion of military geology is essential in the war against terrorism.

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