Bricks, Not Bullets: Transforming Nigeria's TVET Curriculum to Build Environmental Security and Sustainable Peace

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ABSTRACT

Nigeria's escalating insecurity ranging from banditry to insurgency is increasingly linked to environmental degradation, climate-induced resource scarcity, and youth unemployment. While Technical and Vocational Education and Training (TVET) has been advocated as a solution to youth restiveness, its potential to address the environmental drivers of insecurity remains largely untapped. This paper examines the nexus between sustainable construction skills education and community resilience in conflict-prone regions of Nigeria. Drawing on existing literature and recent policy initiatives, the study proposes a transformative framework for integrating environmental security principles into TVET building technology curricula. Findings reveal significant gaps in current programmes regarding climate-adaptive building techniques, green material utilization, and environmental conflict mitigation strategies. The paper argues that equipping TVET graduates with disaster-resilient construction skills, sustainable resource management competencies, and green entrepreneurship capabilities can reduce climate-induced displacement, de-escalate natural resource conflicts, and provide economic buffers against radicalization. The study concludes with recommendations for curriculum reform and the establishment of community-based construction skills centers as strategic investments in long-term conflict prevention and national security.

Keywords: TVET curriculum, environmental security, sustainable peace, bricks, bullets

INTRODUCTION

Nigeria stands at a critical juncture where demographic pressures, environmental degradation, and pervasive insecurity converge to threaten the nation's social fabric and developmental aspirations. With one of the largest youth populations globally, the country faces the daunting challenge of absorbing millions of young people into productive economic engagement while simultaneously addressing escalating environmental threats from oil-induced pollution in the Niger Delta to desertification and resource conflicts in the Middle Belt and Sahel regions (African Development Bank, 2023). These twin crises of environmental decay and youth unemployment are not unrelated; rather, they fuel a vicious cycle where ecological collapse destroys livelihoods, drives poverty, and creates fertile ground for recruitment into criminal networks and insurgent groups (Vanguard, 2026; Independent Newspaper, 2025). It is within this context that Technical and Vocational Education and Training (TVET) emerge as a strategic instrument for breaking this cycle, transforming potential agents of violence into builders

of environmental resilience and architects of sustainable peace (Uduafemhe, 2025). Consequently, this introduction explores the imperative of fundamentally transforming Nigeria's TVET curriculum to prioritize environmental security and peacebuilding, advancing the central thesis that equipping youth with skills in ecological restoration, renewable energy, and sustainable construction literally and metaphorically providing "bricks" for building rather than "bullets" for destruction offers a viable pathway toward addressing the root causes of conflict and fostering long-term national stability.

Specifically, the metaphorical framing of "bricks, not bullets" captures the essential choice facing Nigerian society: whether to invest in productive, life-affirming skills that enable citizens to build communities and restore degraded environments, or to continue bearing the immense human and economic costs of insecurity driven by idle and disaffected youth (Okpara, Stringer, & Dougill, 2023). Specifically, "bricks" represent the constructive potential of TVET; the tangible outputs of skilled labour that include sustainable housing, renewable energy infrastructure, climate-resilient agricultural systems, and environmental remediation projects, all of which serve as the building blocks of environmental security as defined broadly by the United Nations Development Programme to include protection from environmental degradation, access to safe water and clean air, and resilience against climate-induced shocks (Alaso & Emelife, 2025). Conversely, bullets symbolize the destructive trajectory currently evident across Nigeria, the armed conflicts, banditry, and insurgency that thrive when young people lack legitimate economic opportunities and become vulnerable to manipulation by political and criminal entrepreneurs (Obioha, 2024). This dichotomy is not merely poetic; rather, it reflects empirical evidence linking youth unemployment and environmental stress to conflict dynamics, as documented in the Niger Delta where decades of gas flaring and oil spills have not only devastated ecosystems but have also undermined traditional livelihoods such as fishing and farming, pushing many youth into artisanal refining, piracy, and other illicit activities (Udensi, Udensi, Okpara, Akpan & Ndudurim, 2026). Therefore, the choice between bricks and bullets represents a policy pivot from reactive security spending to proactive investment in human capital development that simultaneously addresses environmental restoration and economic empowerment.

Nevertheless, despite decades of policy attention, Nigeria's TVET system has largely failed to deliver on its transformative potential due to persistent challenges including chronic underfunding, outdated and theoretically oriented curricula, weak industry linkages, and deep-rooted societal stigma that privileges university degrees over vocational qualifications (Moka & Azabagun, 2024). Furthermore, the 6-3-3-4 education system introduced in the 1980s envisioned a robust technical education pathway, but implementation faltered as equipment rusted in workshops, teacher training stagnated, and the promised integration with industry never materialized (Uduafemhe, 2025). Nevertheless, a renewed policy momentum is now evident, with the Federal Government through the Nigeria Education Sector Renewal Initiative (NESRI) committing to reposition TVET as the "engine room of innovation, employment, and national growth. Current reforms include curriculum modernization incorporating digital literacy, green energy solutions, and artificial intelligence; the expansion of skills acquisition hubs; and the operationalization of the National Skills Qualification Framework (NSQF) to standardize certifications (BIBB, 2026). Notably, international cooperation through programmes such as the GIZ-funded "Skills Development for Youth Employment (SKYE II)" is actively supporting the development of green skills curricula and National Occupational Standards for Basic Environmental Technology (NOSBET) in partnership with the National Board for Technical Education (NBTE) (Jonathan, 2025). However, these reforms must go further by deliberately integrating environmental security and peacebuilding competencies into the curriculum, thereby training youth not merely for generic employability but for specific roles in climate adaptation, ecosystem restoration, and conflict-sensitive resource management; equipping them to address the very environmental stressors that drive instability in their communities (David & Daniels, 2026; Uduafemhe, 2025).

Furthermore, the proposition that TVET curriculum transformation can advance environmental security and sustainable peace finds robust support in two established theoretical frameworks. First, Human Capital Theory, as articulated by economist Gary Becker (1964), posits that investment in education and skills development enhances individual productivity and, by extension, national economic growth (Lotz-Sisitka, 2023). From this perspective, equipping youth with technical skills in environmental management, renewable energy, and sustainable construction represents a direct investment in human capital that yields multiple returns such as

enhanced employability, increased economic output, and the creation of assets that benefit society broadly (PIND, 2023). Critically, human capital theory also explains the inverse relationship between skills development and conflict: when individuals possess marketable competencies that generate sustainable livelihoods, the opportunity cost of engaging in violence rises substantially, meaning that youth with vocational skills in bricklaying or ecological restoration have something tangible to lose through conflict participation, making them less susceptible to recruitment by insurgent groups (Ogbuanya, & Udoudo, 2015). Given that Nigeria's high unemployment rate, estimated at over 33% among youth, represents not only wasted productive potential but also a massive pool of individuals for whom the opportunity cost of violence is dangerously low (Africa Policy Research Institute APRI, 2025). Transforming TVET curriculum to focus on environmental security sectors which are labour-intensive and have immediate local applications directly addresses this opportunity cost calculus.

The Capability Approach theory, developed by economist and philosopher Amartya Sen (1999), provides a complementary theoretical lens that emphasizes expanding individuals' freedoms and abilities to pursue lives they have reason to value (Becker, 1964). Unlike human capital theory's focus on economic productivity, the capability approach prioritizes human well-being and agency as ultimate ends, making it particularly relevant to understanding how TVET can contribute to sustainable peace (Homer-Dixon, 1999). Environmental degradation in regions like the Niger Delta has not only destroyed livelihoods but has also diminished people's capabilities; their ability to breathe clean air, access safe water, maintain cultural practices tied to the land, and participate meaningfully in community life and these capability deprivations generate grievances that fuel conflict (Federal Government of Nigeria & World Bank, 2025). A transformed TVET curriculum oriented towards environmental security would directly enhance capabilities by training individuals to restore damaged ecosystems, develop climate-resilient agriculture, and create green enterprises that improve community wellbeing (David et al, 2026). Moreover, the participatory pedagogy inherent in effective TVET learning by doing, collaborating on real-world projects, solving local problems aligns with the capability approach's emphasis on agency and empowerment (United Nations Development Programme, 1994). Ensuring that when youth actively participate in rebuilding their environments and communities, they develop not only technical competencies, but civic identity and social cohesion which is the intangible foundations of sustainable peace (Moka et al 2024).

Additionally, the concept of environmental security has evolved significantly from early debates about whether environmental degradation constitutes a national security threat to current understandings that emphasize human security and the complex interconnections between ecological stress, livelihood vulnerability, and conflict (Hamza, Musta'amal & Kamin, 2020). In the Nigerian context, these connections are starkly visible: in the Sahel region, advancing desertification and water scarcity intensify competition between farmers and herders, generating intercommunal violence that has claimed thousands of lives; in the north central zone, land degradation and population pressure fuel similar conflicts; and in the Niger Delta, oil-related pollution has created what one observer terms "a paradox of abundance and adversity" resource wealth coexisting with environmental catastrophe, poverty, and violent criminality (Tribune Online, 2025). These are not merely coincidental phenomena but manifestations of environmental insecurity undermining human security and triggering conflict dynamics and addressing them requires more than military responses or palliative social programmes; rather, it demands the development of local capacities for environmental management, sustainable resource use, and conflict resolution, which is precisely where a transformed TVET curriculum becomes indispensable.

Furthermore, sustainable peace, in this context, cannot be achieved solely through ceasefires, disarmament programmes, or security force deployments, as these measures address symptoms rather than root causes (International Crisis Group (ICG), 2024). Genuine, durable peace requires building positive peace; the presence of social institutions and economic structures that enable conflict to be resolved non-violently and human needs to be met equitably (Global Shelter Cluster, 2024). TVET that equips youth with skills for environmental restoration contributes directly to positive peace by rebuilding the ecological foundations of livelihoods, creating economic opportunities that reduce grievance, and fostering cooperation across divided communities through shared projects (Sen,1999). When youth from different ethnic or religious backgrounds collaborate on reforestation, clean energy installation, or sustainable agriculture initiatives, they build social capital alongside technical competence, and this peacebuilding dimension of TVET is increasingly recognized in policy discourse,

with recent initiatives such as the European Union-funded programmes explicitly linking environmental restoration, skills development, and peacebuilding outcomes (Independent Newspaper Nigeria, 2025; BIBB, 2026). Therefore, the challenge now is to embed these insights systematically into Nigeria's TVET curriculum.

Transforming Nigeria's TVET curriculum to prioritize environmental security and sustainable peace represents a strategic imperative for a nation grappling with intertwined crises of ecological degradation, youth unemployment, and violent conflict (Federal Ministry of Education, 2025). The metaphorical choice between "bricks" and "bullets" captures the fundamental policy orientation: investing in skills that enable young people to build, restore, and sustain their communities versus continuing to bear the costs of insecurity driven by idle and disaffected populations (Independent Newspaper Nigeria, 2025). Such transformation offers both economic rationales, enhances productivity and raises the opportunity cost of violence, and human development rationale expanding individuals' capabilities and agency to pursue meaningful lives (Achor, 2022). As Nigeria advances its current TVET reforms through initiatives like the green skills development (BIBB, 2026; David et al, 2026), deliberate integration of environmental security competencies and peacebuilding pedagogies will determine whether these reforms achieve their full potential. Ultimately, the bricks that Nigerian youth can produce through skilled labour include, solar panels installation, mangroves restoration, climate-resilient farms establishment, sustainable homes construction among others are not merely products but foundations of environmental security and sustainable peace. Transforming the curriculum to prioritize these outcomes is not simply an educational reform but a national security strategy and a peacebuilding imperative (Uduafemhe, 2025; Moka et al 2024).

Statement of the Problem

Nigeria faces interconnected crises of high youth unemployment, widespread insecurity, and accelerating environmental degradation. TVET has been promoted as a solution, but current initiatives overlook the link between environmental pressures and conflict.

Building technology education lacks a framework that integrates green skills such as climate-adaptive construction and sustainable resources, use to both improve employability and reduce environmentally driven insecurity. The study sought to address this gap by asking how Nigeria’s TVET building technology curriculum can be reformed to achieve these dual goals?

Purpose of the Study

The main purpose of the study was to examine the potential of building technology education within Nigeria's TVET system to address environmental drivers of insecurity. Specifically, the study sought to:

1. To analyze the relationship between environmental degradation, youth unemployment in the construction sector, and the prevalence of insecurity in conflict-prone regions of Nigeria.

2. To develop a curriculum framework that integrates environmental security principles and sustainable construction skills into TVET building technology programmes to enhance both graduate employability and community resilience.

Research Question

The study was guided by the following research questions:

1. What is the relationship between environmental degradation, youth unemployment in the construction sector, and the prevalence of insecurity in conflict-prone regions of Nigeria?

2. What environmental security principles and sustainable construction skills should be integrated into TVET building technology programmes to enhance graduate employability and community resilience in conflict-prone regions of Nigeria?

Hypotheses

Two hypotheses formulated to guide the study were as follows:

H_{01}: There is no significant relationship between environmental degradation, youth unemployment in the construction sector, and the prevalence of insecurity in conflict-prone regions of Nigeria as perceived by TVET lecturers

H_{02}: There is no significant consensus among TVET experts on the environmental security principles and sustainable construction skills that should be integrated into TVET building technology programmes to enhance graduate employability and community resilience.

METHODOLOGY

The study adopted a survey research design, which was deemed appropriate for collecting quantitative data on the perceptions of TVET lecturers regarding curriculum transformation for environmental security and sustainable peace. The study was carried out in the South-East geopolitical zone of Nigeria, focusing on the four public Colleges of Education (Technical) in the region: Federal College of Education (Technical), Umunze; Federal College of Education (Technical), Isu; Enugu State College of Education (Technical), Enugu; and Abia State College of Education (Technical), Arochukwu. The target population consisted of all 63 TVET lecturers across these four institutions. Given that the population size was manageable, a census sampling approach was employed, meaning no sampling was conducted and all 63 lecturers were included as respondents in the study. The instrument for data collection was a self-structured questionnaire titled "TVET Curriculum Transformation for Environmental Security and Sustainable Peace Questionnaire (TVET-ESSPQ)," designed on a 5-point Likert scale ranging from Strongly Agree to Strongly Disagree. To ensure face and content validity, the questionnaire was reviewed by two experts from Vocational and Technical Education faculty, university of Nigeria, Nsukka. Their feedback guided necessary modifications. The reliability of the instrument was established through a pilot test using Cronbach's alpha coefficient, which yielded a reliability index of 0.77, indicating a high level of internal consistency suitable for the study. Data collection was conducted through google survey to all 63 respondents, resulting in a 100% retrieval rate. Finally, data analysis employed both descriptive and inferential statistics: mean and standard deviation were used to answer the research questions, while a t-test was applied to test the hypotheses at a 0.05 level of significance.

RESULTS

Table 1 Mean and SD ratings of senior and junior TVET Lecturers on the perceived relationship between environmental degradation, youth unemployment in the construction sector, and the prevalence of insecurity in conflict-prone regions of Nigeria

(N=63)

S/N	Item Statements	Mean	SD
1	Environmental degradation contributes to the prevalence of insecurity in conflict-prone regions	3.81	1.26
2	Competition over diminishing natural resources escalates violent conflicts in communities	4.21	0.92
3	Youth unemployment in the construction sector increases the vulnerability of young people to recruitment into violent groups	3.80	1.03
4	There is a direct link between ecological degradation and the displacement of communities, leading to communal clashes	4.10	0.71
5	Lack of employment opportunities in construction trades drives youth toward criminal activities and insurgency	3.80	1.48
6	Environmental crises such as flooding and drought exacerbate resource scarcity, fueling farmer-herder conflicts	3.80	1.01

7	High rates of youth unemployment in the construction sector correlate with increased incidences of civil unrest and violence	3.80	1.14
8	Degraded environments reduce economic opportunities, creating conditions conducive to insecurity	3.70	1.09
9	Engagement of unemployed youth in sustainable construction projects significantly reduces involvement in conflict-related activities	4.20	0.64
10	Environmental degradation and youth unemployment in construction collectively represent significant predictors of insecurity in conflict-prone regions	3.90	0.59

Table 1 presents survey of senior and junior TVET lecturers. The survey findings indicate that both senior and junior TVET lecturers strongly perceive a positive relationship among environmental degradation, youth unemployment in the construction sector, and insecurity in conflict-prone regions of Nigeria. With all mean scores at 3.5 and above, the consensus is robust, though not perfectly uniform.

Table 2 t-test on the mean ratings of junior and senior TVET lecturers on the perceived relationship between environmental degradation, youth unemployment in the construction sector, and the prevalence of insecurity in conflict-prone regions of Nigeria

Academics	N	Mean	Std. Deviation	t-test	df	Sig.	Dec.
Senior	52	3.95	0.31	0.802	61	0.37	Do not reject H_{01}
Junior	11	3.80	0.36				

Table 2 containing an independent samples t-test showed a significant difference between junior and senior TVET lecturers in their perceived relationship between the three variables, $t(61) = 0.802$, $p = 0.37$.

Since p was greater than .05, the null hypothesis was not rejected, indicating that the two groups share the same perceptions. Both senior and junior TVET lecturers share statistically equivalent perceptions that a positive relationship exists among environmental degradation, youth unemployment in the construction sector, and insecurity in conflict-prone regions of Nigeria. Academic status does not influence these perceptions.

Table 3 Mean and SD ratings of junior and senior TVET lecturers on the environmental security principles and sustainable construction skills to be integrated into TVET building technology programmes to enhance graduate employability and community resilience in conflict-prone regions of Nigeria

(N=63)

S/N	Item Statements	Mean	SD
1	Climate-responsive building design principles should be integrated into TVET building technology curricula	4.24	0.93
2	Sustainable material sourcing and utilization of locally available, eco-friendly construction materials should form a core component of training	3.83	0.61
3	Water management techniques in construction projects should be taught to graduates	4.27	0.60
4	Construction waste recycling strategies should be embedded in practical training modules	3.87	1.24
5	Development of environmental impact assessment skills in ecologically sensitive and conflict-prone areas	3.67	0.88
6	Integration of conflict-sensitive construction practices that promote equitable resource allocation and community engagement	3.80	1.05
7	Inclusion of land restoration and rehabilitation techniques for degraded sites linked to resource-based conflicts into the curriculum	4.06	0.86
8	Peacebuilding and conflict resolution principles applied to construction project management should be integrated	4.31	0.71

9	Entrepreneurship and business development skills for establishing sustainable construction enterprises should be emphasized to enhance graduate employability	3.81	0.72
10	Community-based participatory approaches to construction that foster transparency, trust, and local ownership should be incorporated into training	3.94	0.96

Table 3 presents the junior and senior TVET lecturers mean ratings on environmental security principles and sustainable construction skills to be integrated into TVET building technology programmes in order to enhance graduate employability and community resilience in conflict-prone regions of Nigeria, using the 3.50 cut-off point as the basis for agreement. The mean responses show that the respondents agreed on all the items. This indicates a general optimism for adoption and integration.

Table 4 t-test on the mean ratings of junior and senior TVET lecturers on the environmental security principles and sustainable construction skills to be integrated into TVET building technology programmes to enhance graduate employability and community resilience in conflict-prone regions of Nigeria

Academics	N	Mean	Std. Deviation	t-test	df	Sig.	Dec.
Senior	52	4.00	0.23	0.951	61	0.04	Reject H_{02}
Junior	11	3.91	0.22				

Table 2 containing an independent-samples t-test showed a significant difference between junior and senior TVET lecturers in their perception of environmental security principles and sustainable construction skills to be integrated into TVET building technology programmes to enhance graduate employability and community resilience in conflict-prone regions of Nigeria, $t(61) = 0.951$, $p = 0.04$. Since $p < .05$, the null hypothesis was not accepted, indicating that the two groups did not share the same perceptions on the itemized environmental security principles and sustainable construction techniques. The significant difference in perceptions suggests that academic seniority is a key factor that influences dispositions. This divergence opinion indicates that strategies to promote adoption of the principles may need to be tailored: targeting education on practical benefits for junior academics, while addressing the specific skepticism or experience-based concerns of their senior counterparts to build a unified, evidence-based consensus.

DISCUSSION

The convergence of environmental degradation, youth unemployment, and insecurity in Nigeria presents both a crisis and an opportunity. While TVET is recognized for addressing youth restiveness, its potential for tackling environmental drivers of conflict through building technology education remains underexplored.

According to Hamza, Musta'amal, & Kamin (2020), current construction curricula lack comprehensive environmental content, leaving graduates without green skills for climate adaptation and sustainable livelihoods. Such competencies could reduce conflict by mitigating displacement, de-escalating resource competition, and providing economic alternatives to radicalization. This agrees with independent studies carried out by APRI (2025) & Obioha (2024). Community-based TVET models such as RET International's (2025) Katsina project and the IDEAS-TVET initiative (Federal Government of Nigeria & World Bank, 2025) demonstrate viability, though historical challenges like underfunding and stigma persist. However, the green economy offers opportunities, with sustainable construction emerging as a promising sector. As Uduafemhe (2025) argues, TVET should be treated as a strategic weapon in the fight for peace. Building technology education designed for environmental security offers Nigeria a pathway from vulnerability to resilience.

RECOMMENDATIONS

Based on findings and discussions, the following recommendations were proposed:

1. A nationwide reform of building technology education is urgently needed. Curricula must be updated to integrate environmental security principles, with a focus on climate-adaptive construction, sustainable eco-friendly materials, conflict sensitivity, and green entrepreneurship.

2. Dual-purpose training centers should be created in conflict-prone zones. These centers would serve as both TVET hubs and peace-building platforms. By training Peace Technicians, these hubs would enable communities to collaboratively build critical infrastructure while fostering cooperation between conflicting groups.

CONCLUSION

The path to sustainable peace in Nigeria does not lie solely in security operations; it lies in the power of skills, soil, and structure. *Bricks, not bullets,* capture a fundamental truth: where environmental degradation and youth unemployment converge, insecurity thrives; but where young people are equipped with relevant, sustainable skills, resilience takes root. The study confirms that building technology education within Nigeria's TVET system holds transformative, yet largely untapped, potential. By establishing a clear link between environmental collapse, joblessness in the construction sector, and rising insecurity in conflict-prone regions, the study underscores an urgent need for action.

In response, the proposed curriculum transformation offers a practical blueprint, one that embeds environmental security, climate-adaptive construction, and conflict sensitivity into the very fabric of technical education. When young Nigerians are trained not just to build, but to build sustainably and peaceably, they become agents of stability rather than recruits for unrest. *Bricks, not bullets,* is therefore more than a title; it is a call to reimagine TVET as a strategic tool for nation-building. By investing in bricks crafted through sustainable skills, Nigeria can lay the foundation for both environmental security and lasting peace.

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