FROM TRADITION TO SUSTAINABILITY: BUSH BURNING IN KOGI STATE FOR CLIMATE ACTION

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Abstract
This paper examines the practice of bush burning in Kogi State through the lens of environmental sustainability and climate action. It explores the traditional origins, agricultural utility, and seasonal cycles that have normalized bush burning across communities, especially in Kogi East. Utilizing a combination of personal narrative, field observation, and scholarly review, the paper identifies how unchecked bush burning contributes to soil degradation, climate change, and public health hazards. It also highlights a critical knowledge gap among local populations regarding the long-term environmental effects. The paper proposes culturally informed interventions and sustainable alternatives to bush burning, such as mulching and composting, while emphasizing the need for improved policy implementation, community engagement, and academic research. Growing up in rural Kogi East, bush burning was more than an agricultural routine; it was a seasonal spectacle that brought children out into the fields, not just to observe, but to chase after escaping bush rats as the flames cleared the land. It was a game of thrills and laughter, divorced from any understanding of the environmental damage it caused. Today, there is a need for environmental education and policy change.

Keywords: Bush burning, climate change, sustainability, Kogi State, environmental policy, traditional practices.

1. Introduction

Among children, the dry season in rural Kogi East often evoked excitement as vast stretches of farmland were set ablaze. These bush burnings cleared the land for the next farming season and created the illusion of renewal. As a child growing up in this environment, I often joined my peers in playing with the glowing embers, unaware of the environmental implications. We even looked forward to the thrill of chasing bush rats escaping the fire, a common game that blurred the line between danger and delight. I vividly recall an incident where my younger brother, in a bid to replicate what we saw adults do, almost set our house ablaze while attempting to burn the surrounding dry bushes. These experiences illustrate how normalized the practice of bush burning was in our formative years, an embedded seasonal ritual.

The normalized practice of bush burning, inherited across generations, is often perceived as a necessary agricultural routine in many parts of sub-Saharan Africa, including Nigeria (Agbaje,

2020). Farmers use it to clear land quickly, eliminate pests, and prepare for planting. In regions like Kogi East, where farming is largely subsistence-based, bush burning offers a low-cost, time-efficient solution (Adebayo, 2013). However, mounting evidence suggests that the environmental and health impacts of this tradition far outweigh its short-term agricultural benefits. Repeated burning leads to the depletion of essential soil nutrients, reduces land productivity over time, and contributes significantly to greenhouse gas emissions (Oyekale, 2008; Nwafor, 2015).

Furthermore, studies have established a strong correlation between bush burning and the intensification of climate-related challenges such as desertification, irregular rainfall, and biodiversity loss (FAO, 2017; UNEP, 2020). The World Health Organization has also linked prolonged exposure to smoke from bushfires with increased respiratory ailments, particularly among vulnerable populations like children and the elderly.

This paper delves into the complex intersections between tradition and environmental sustainability, using Kogi East as a case study to advocate for more sustainable land-use practices and climate-conscious farming methods. It aims to strike a balance between preserving indigenous agricultural knowledge and advancing scientifically grounded, ecologically responsible solutions.

2. Literature Review

Bush burning is common in many parts of sub-Saharan Africa, often used to clear land, control pests, and renew soil fertility. However, scholars such as Agbaje (2020) and Oyekale (2008) argue that its environmental costs outweigh the benefits. The release of greenhouse gases, the destruction of soil nutrients, and the reduction in biodiversity are critical concerns. Nwafor (2015) and FAO (2017) highlight how unregulated burning exacerbates climate change by increasing carbon emissions and promoting desertification.

In Nigeria, bush burning is especially prevalent during the dry season (November–March), coinciding with harvest and land preparation periods. The lack of awareness among rural populations about its consequences, compounded by weak regulatory enforcement, has made it difficult to introduce sustainable alternatives. Scholars like Adebayo (2013) and Okonkwo (2019) have called for community-based education and participatory governance to shift these practices.

This paper contributes to the literature by offering a localized narrative from Kogi East, reflecting both the cultural entrenchment of bush burning and opportunities for behavioral transformation. Bush burning has long been entrenched in traditional agricultural systems, particularly in tropical regions where smallholder farmers lack access to mechanized farming tools. According to Ndaeyo (2007), slash-and-burn agriculture is often a necessity due to limited capital and technical knowledge, rather than a preference. However, the environmental consequences of such methods continue to draw concern from both environmentalists and development scholars. For instance, Ijeoma and Chukwudi (2016) report that annual bush fires

in southeastern Nigeria destroy thousands of hectares of farmland, contribute to erosion, and displace wildlife.

Comparative studies across African countries show that this problem is not unique to Nigeria. In Ghana, Nyame and Asante (2014) found that despite governmental bans on bush burning, compliance remains low due to socio-cultural norms and weak enforcement mechanisms. In Ethiopia, fire is traditionally used to clear land in the highlands, but recent shifts in environmental policy have led to greater success in promoting agroecological alternatives like terracing and zero-burning cultivation techniques (Taffesse, 2018). These models provide instructive lessons for Nigerian states grappling with similar challenges.

From a theoretical standpoint, bush burning raises deeper questions about the relationship between humans and the natural environment. Philosophical frameworks such as eco-centrism and deep ecology argue for the intrinsic value of nature, suggesting that practices which destroy ecosystems for short-term human gain are morally unjustifiable (Naess, 1973; Callicott, 1995). Eco-centrism contrasts with anthropocentric approaches that see nature merely as a resource for human use. By this measure, bush burning constitutes a violation of ecological balance and long-term planetary stewardship.

African philosophical thought also offers valuable insights. The principle of African communalism, for example, emphasizes the interconnectedness of individuals within their community and the natural world (Gyekye, 1997). Within this framework, environmental harm, such as bush burning, affects not just the individual farmer but the wider community and future generations. Mogobe Ramose (2002) further argues that Ubuntu ethics, which promote harmony and mutual respect, can serve as a foundation for environmentally responsible behavior.

Moreover, contemporary environmental ethics encourages a shift from control-based to partnership-based models of land stewardship. This is in line with Leopold's (1949) Land Ethic, which calls for humans to become "plain members and citizens" of the land community. In practice, this means recognizing the long-term ecological costs of bush burning and developing alternatives rooted in respect for the earth.

Recent interventions in states like Cross River and Kaduna have shown that participatory approaches, where local leaders, youth groups, and NGOs are involved in designing and enforcing environmental regulations, can yield better results than top-down policies. For example, the Green Shield Project in Cross River integrates traditional leaders into conservation efforts, helping to reduce bush burning and poaching through community sensitization programs (Okon & Bassey, 2020).

Overall, the literature reflects a growing consensus that sustainable alternatives to bush burning are both necessary and feasible. Yet, success depends on aligning ecological goals with cultural realities. As this paper explores, local narratives from Kogi East offer a critical entry point into reshaping environmental behavior through culturally relevant education, community engagement, and ethical reflection.

3. Methodology

3.1 Personal Narrative

This study begins with our personal reflections and lived experiences, offering ethnographic insight into cultural perceptions of bush burning.

Growing up in Kogi State, bush burning was not only a seasonal routine but a spectacle. Children like us eagerly anticipated the dry season, when crackling fires would light up the farms. These memories, especially the incident involving a younger sibling who nearly set our house ablaze while attempting to burn the surrounding bushes, inform this study's focus on the intimate links between culture, childhood, and environmental risk.

3.2 Field Observation

During December 2023 and January 2024, observations were conducted across four communities in Kogi East: Idah, Ankpa, Anyigba, and Ejule. These communities were purposively selected because they represent both the cultural heartland and agricultural zones of Igala-speaking Kogi East. Our deep lived experiences in Kogi East allowed us to navigate social contexts with ease, facilitating access to community leaders and farmers.

The frequency, scale, and methods of bush burning were recorded, with attention to the timing, tools used, and communal participation. Informal interviews were held with 12 local farmers and 3 traditional leaders, who shared practical and cultural reasons behind the practice. One farmer in Ejule noted, *"We know it's not the best for the soil, but this is how we prepare our land. It's cheaper than hiring tractors."* Another from Idah stated: *"We have always done it this way; stopping bush burning feels like giving up what our fathers taught us."*

3.3 Secondary Data

Academic articles, reports from the Nigerian Meteorological Agency (NiMet), and international sources such as the FAO and UNEP were reviewed to contextualize findings. These sources provided a macro-level understanding of bush burning's contribution to climate change, soil degradation, and public health concerns, which were then contrasted with the local-level realities observed in the field.

3.4 Analytical Framework

A qualitative analysis was applied, focusing on the interplay between indigenous knowledge systems and environmental sustainability frameworks. Themes were drawn from both interview data and field notes, and analyzed in relation to environmental ethics (such as deep ecology and African communalism) and sustainability principles.

3.5 Methodological Limitations

This study encountered several limitations. First, language barriers emerged during some interviews, particularly with older participants more comfortable speaking in Igala. Though informal translation helped bridge this gap, nuances may have been lost. Second, the timing of

the research, during the early dry season, meant that not all communities had commenced burning, potentially limiting observational data. Lastly, the reliance on personal networks for access, while beneficial, may have introduced bias, as the most receptive or familiar participants were more likely to engage.

4. Findings

4.1 Cultural Acceptance

Bush burning is considered a rite of passage in agricultural communities, often seen as a marker of seasonal change. In Kogi State, the onset of the dry season is signaled by controlled fire clearing, sometimes accompanied by cultural festivities and youth participation. This normalization is not unique to Nigeria; studies in Ghana (Nyame & Asante, 2014) reveal similar patterns where fire is tied to ancestral farming practices and communal land rituals.

Field interviews reinforced the generational divide in perception. Older farmers expressed pride in continuing "the ways of their forefathers," insisting that "bush burning is faster, cheaper, and part of our identity." However, many younger residents, especially students and graduates, questioned the long-term effects. A university undergraduate from Anyigba remarked, *"I grew up helping my father burn the farm, but now I'm learning about the environmental cost. It's hard to explain to him that things must change."*

4.2 Environmental Impact

Observations across Idah, Ankpa, Ejule, and Anyigba confirmed that bush burning often spans several hectares per community. According to a 2021 report by the Nigerian Meteorological Agency (NiMet), over 450,000 hectares of farmland in north-central Nigeria are subjected to seasonal burning annually, with Kogi State accounting for a significant proportion.

Environmental consequences are far-reaching. Recurrent fires strip topsoil of nutrients, leaving the ground bare and susceptible to erosion during the rainy season. Satellite imagery analyzed by the Food and Agriculture Organization (FAO, 2017) shows that areas with intense bush burning exhibit lower soil fertility indices and slower vegetation regrowth. Additionally, biodiversity is threatened as fire disrupts insect pollinators, displaces rodents, and destroys seed banks critical for forest regeneration.

4.3 Health Hazards

Air quality during the dry season significantly deteriorates due to persistent smoke. Health workers in Anyigba and Ankpa noted a marked increase in respiratory complaints between November and February. According to clinic records from a local Primary Health Centre in Ankpa, outpatient visits for coughing, shortness of breath, and eye irritation rose by 38% during the 2023–2024 dry season compared to the wet season.

Children and the elderly remain the most affected. A school teacher in Ejule noted, *"We advise children to stay indoors during peak burning days, but even when homes get filled with smoke, it's unavoidable."* This aligns with WHO (2018) findings that particulate matter from open

biomass burning is linked to increased asthma, bronchitis, and long-term lung damage, particularly in vulnerable populations.

4.4 Policy Gaps

Although the National Environmental (Control of Bush/Forest Fire and Open Burning) Regulations of 2011 prohibit indiscriminate fire use, enforcement is inconsistent. Traditional leaders often lack the legal authority to penalize offenders, and environmental officers are few and poorly resourced. During interviews, one community elder from Idah admitted: "*We know there are rules, but who will enforce them? The government is far from our farms.”*

Comparatively, states like Cross River have made more progress by incorporating environmental rules into local governance structures. The Green Shield Project (Okon & Bassey, 2020) in Cross River, for instance, empowers traditional rulers and youth volunteers to monitor bush burning activities and mediate violations through customary sanctions. Such participatory enforcement models remain absent in most parts of Kogi State.

In summary, findings suggest that while bush burning remains culturally embedded and economically convenient, its environmental and health impacts are intensifying. The practice persists amid weak policy implementation and generational inertia, underscoring the need for interventions that are both culturally sensitive and ecologically informed.

5. Discussion

5.1 Bridging Tradition and Sustainability

While bush burning holds cultural significance, its environmental cost necessitates a reevaluation. Indigenous practices must evolve through education and exposure to sustainable alternatives. As Ijeoma and Chukwudi (2016) noted, the persistence of bush burning is often a result of structural limitations, not cultural defiance. The challenge, therefore, lies in offering viable and contextually relevant alternatives. Agroecological models like those promoted in Ethiopia (Taffesse, 2018) demonstrate that it is possible to maintain cultural rhythms while reducing ecological damage through improved techniques like zero-burning and terracing.

5.2 Climate Change and Local Action

There is limited awareness that local practices like bush burning contribute to global climate issues. This knowledge gap must be addressed through grassroots engagement and climate education in local languages. Studies from Ghana (Nyame & Asante, 2014) suggest that awareness campaigns led by local influencers can change behaviors more effectively than top-down laws. In Kogi East, community theatre, local radio in Igala, and school-based environmental clubs may serve as useful vehicles to bridge this knowledge gap. Localized action can help integrate global climate priorities with daily decision-making by rural farmers.

5.3 Government and Civil Society

Policies must move beyond punitive frameworks to incentive-based models. Civil society organizations can play a mediating role in promoting sustainable farming. In Cross River State,

the Green Shield Project (Okon & Bassey, 2020) showed that when traditional leaders are engaged in conservation efforts, community adherence increases. Government interventions should prioritize subsidizing equipment like mechanized weeders, provide training in mulching and composting, and institutionalize environmental clubs across secondary schools in rural districts.

5.4 Ethical Implications: A Moral Obligation to the Future

Bush burning is not merely a land-use issue but a question of ethical responsibility. Environmental ethics frameworks such as deep ecology and eco-centrism argue for intrinsic respect for nature (Naess, 1973; Callicott, 1995). But even more directly relevant to African contexts is the idea of intergenerational justice. Practices that degrade land and air quality today impose unjust burdens on future generations. This concern aligns with the African philosophical principle of communalism, which links individual actions to the welfare of the larger community, present and unborn (Gyekye, 1997).

The rural poor often bear the brunt of ecological degradation caused by such practices. This raises the question of climate justice, which highlights that those contributing least to climate change often suffer its worst consequences. In communities like Odolu and Ejule, children walk through smoky footpaths daily, and elderly farmers breathe in toxic fumes to prepare land for food production. Ethical discourse should move from mere condemnation to advocating for justice, justice that empowers the rural poor with alternatives, without discrediting their identity and struggles.

5.5 Stakeholder Analysis: Who Holds the Fire?

Several actors are entangled in the persistence and potential transformation of bush burning:

Farmers: Often driven by economic constraints, they continue the practice because it is cheap and time-efficient. Some are aware of its negative effects but feel powerless to change.

Traditional Rulers: Custodians of cultural authority, they play a critical role in legitimizing or discouraging harmful practices. In some cases, their silence reinforces the status quo.

Government Agencies: Though policies exist, implementation is weak. Environmental agencies often lack the capacity or political will to enforce existing laws.

Civil Society Organizations (CSOs): NGOs and advocacy groups offer training and awareness programs but face funding and access limitations.

Schools and Churches: As trusted community institutions, they can serve as sites for environmental education and moral reorientation.

Youth Groups: More open to innovation, rural youth can become climate ambassadors if empowered with the right tools and knowledge.

A multi-stakeholder approach, where each group is given both responsibility and support, is essential. For instance, traditional rulers can endorse bush-burning alternatives during festivals, while churches and mosques can integrate creation care into sermons. Schools can adopt environmental clubs that conduct seasonal campaigns, and CSOs can provide demonstration plots to showcase mulching and composting techniques.

6. Recommendations

6.1. Community Education:

Launch multilingual campaigns to raise awareness on the environmental impact of bush burning. Awareness must begin at the grassroots, utilizing radio programs, community theatre, town criers, and religious platforms in languages such as Igala, Ebira, and Nupe. These campaigns should be phased across the calendar year, with heightened activity in the months preceding the dry season (September–November). Engaging traditional leaders and local influencers will help reinforce messages through culturally respected channels.

6.2. Sustainable Alternatives:

Promote mulching, composting, and agroforestry as practical and affordable options. Demonstration farms should be established in each Local Government Area in Kogi State, where farmers can receive hands-on training. These initiatives can be supported through partnerships with agricultural departments of local universities (e.g., Kogi State University) and NGOs such as the Nigerian Environmental Study/Action Team (NEST). A three-phase model is proposed:

• Phase 1 (0–6 months): Identify pilot communities and train facilitators.

• Phase 2 (6–12 months): Roll out demonstration plots and evaluate adoption.

• Phase 3 (1–2 years): Expand outreach and incorporate feedback into curriculum design.

6.3. Policy Reform:

Update and enforce land-use laws with local input. Policies should adopt a participatory governance model, where local farmers and traditional leaders are part of task forces overseeing enforcement and adaptation. A proposed Community-Based Environmental Task Force can be institutionalized under the Ministry of Environment at the state level, with representation from CSOs, youth groups, local government councils, and extension workers. Rather than purely punitive laws, incentives, such as subsidized organic fertilizers or access to improved seedlings, should reward compliant farmers.

6.4. Academic Involvement:

Encourage tertiary institutions to conduct community-based research and provide practical solutions. Environmental studies departments can integrate service-learning into their curriculum, requiring students to undertake fieldwork in surrounding communities. These

partnerships can be co-funded through grants from international agencies such as the United Nations Development Programme (UNDP) or the Global Environment Facility (GEF). Research should focus on testing and adapting sustainable farming practices that are affordable and culturally acceptable.

6.5. Youth Engagement:

Mobilize youth through climate clubs and digital advocacy tools to challenge outdated practices. Schools should include climate education in their curricula, and youth organizations should be trained to lead sensitization campaigns. A digital advocacy initiative, #GreenKogi, can be launched to amplify youth voices on social media while organizing community cleanups and no-burn pledges. Creating an annual Kogi Youth Climate Summit will help build long-term leadership and networking.

7. Conclusion

This paper has shown that bush burning, while traditionally justified, poses significant threats to the environment, public health, and climate resilience. By bridging traditional knowledge with scientific insight, communities in Kogi State can transition toward more sustainable practices. The path forward requires collective responsibility, from local farmers to policymakers, from scholars to students. It is only through inclusive, participatory action that we can rewrite the future of agriculture in harmony with the planet.

As demonstrated through personal narratives, field observations, and literature across Nigeria and broader Africa, the practice of bush burning is not merely an environmental issue, it is a socio-cultural phenomenon that demands thoughtful, context-specific responses. The persistence of this practice in Kogi state reflects a deeper challenge: the intersection of economic limitations, cultural identity, and the absence of viable alternatives. The findings underscore that shifting these embedded habits requires more than regulation; it calls for educational transformation, trust-building, and the co-creation of solutions with the very communities involved.

Furthermore, the study situates bush burning within broader philosophical and ethical discourses, especially the imperatives of intergenerational justice, African communalism, and environmental ethics. The moral obligation to preserve land for future generations is not only a philosophical concern but a practical one, as degradation today will leave tomorrow's farmers with diminishing returns, poorer health outcomes, and heightened climate vulnerability.

Encouragingly, there are emerging models, both within Nigeria and across the continent, that show change is possible when communities are engaged meaningfully. From participatory conservation initiatives in Cross River to agroecological shifts in Ethiopia, the potential exists for Kogi State to chart its own path toward sustainability. Universities, civil society organizations, traditional institutions, and government agencies each have a unique and essential role to play in this transition.

In conclusion, while the challenges are deep-rooted, they are not insurmountable. By anchoring change in both cultural awareness and ecological responsibility, we can reimagine farming traditions that no longer harm but heal. This paper is a call to action: to rethink, reform, and renew the practices that shape our environment, before it is too late.

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