Integrating Nigerian Indigenous Languages into Climate Education: Bridging Knowledge Systems for Sustainable Development.

Abstract

Climate change presents one of the greatest challenges to sustainable development in Nigeria and across the globe. While significant efforts have been made in climate education and awareness, these efforts often exclude indigenous perspectives and the linguistic realities of local communities. In Nigeria, with its vast array of indigenous languages and diverse cultural knowledge systems, the use of dominant or foreign languages in climate communication has limited the reach and effectiveness of environmental campaigns. This research explores the integration of Nigerian indigenous languages into climate education as a means of bridging Western scientific knowledge with indigenous ecological wisdom. The study addresses the existing gap in the localization of climate communication, particularly the lack of culturally and linguistically inclusive strategies that can empower grassroots communities to participate in climate action. The primary objective is to investigate how indigenous languages can serve as vehicles for effective climate education and to assess the implications of such integration for sustainable development goals. Using a qualitative research approach, the study will involve semi-structured interviews, focus group discussions, and document analysis in selected indigenous communities across Nigeria. Participants will include local educators, traditional knowledge holders, language practitioners, and environmental activists. It is expected that the findings will reveal the untapped potential of indigenous languages in contextualizing climate issues, fostering community engagement, and strengthening environmental literacy. Ultimately, the study aims to offer practical recommendations for developing inclusive climate education policies that respect and utilize Nigeria's rich linguistic and cultural heritage.

Keywords:Indigenous Languages, Climate Education, Sustainable Development, Nigeria, Knowledge Systems

Introduction

Climate change has become a defining challenge of the 21st century, posing profound environmental, economic, and social threats to global well-being. In Africa, and particularly in Nigeria, the impacts are already being felt in the form of irregular rainfall patterns, desertification, coastal erosion, and declining agricultural productivity. Despite increasing national and international efforts to address climate change, a major gap remains in the effective communication and education of climate-related knowledge at the grassroots level. Communication barriers frequently exacerbate misunderstandings and escalate tensions (Ayeni & Itam, 2025: 2). Most climate education initiatives in Nigeria are delivered in English or other official languages, which often alienate large sections of the population who are more proficient in indigenous languages. This linguistic gap not only limits the effectiveness of climate communication but also overlooks the valuable ecological knowledge embedded in local cultures.

The integration of Nigerian indigenous languages into climate education presents an opportunity to localize climate discourse, enhance public understanding, and encourage behavioural change. Indigenous knowledge systems, transmitted through

native languages, offer nuanced perspectives on environmental stewardship and sustainable living. However, these systems remain marginalized in formal education and policy discussions. As Ajayi notes, "indigenous languages are repositories of environmental wisdom, and their exclusion from climate discourse perpetuates epistemological inequality" (Ajayi 142).This study investigates how Nigerian indigenous languages can be systematically integrated into climate education to bridge the divide between Western scientific knowledge and local ecological understanding. The key objectives are: (1) to examine the current use of indigenous languages in climate education and communication in Nigeria; (2) to explore how indigenous knowledge can enhance climate literacy; and (3) to propose inclusive strategies for climate education that harness linguistic diversity for sustainable development.In pursuing these objectives, the research seeks to answer the following questions:How are Nigerian indigenous languages currently utilized in climate education and awareness initiatives?What role do indigenous knowledge systems play in environmental understanding and communication?How can indigenous languages be effectively integrated into national climate education frameworks?

This study is significant because it addresses a dual exclusion—linguistic and epistemic—that limits the reach and effectiveness of climate education in Nigeria. By foregrounding indigenous languages, the study contributes to broader debates on decolonizing knowledge, promoting inclusive development, and achieving the United Nations Sustainable Development Goals (SDGs), especially Goal 13 (Climate Action) and Goal 4 (Quality Education). Furthermore, it highlights the need for educational and communication strategies that reflect Nigeria's multilingual and multicultural realities.The research is limited to selected communities in Nigeria where indigenous languages are still actively spoken and where environmental challenges are prevalent. It does not attempt to provide a comprehensive survey of all Nigerian languages, but rather focuses on representative case studies to illustrate broader trends and challenges.

For clarity, key terms used in this study are defined as follows:

Indigenous Languages refer to native languages spoken by local ethnic communities in Nigeria, as opposed to colonial or imported languages.

*Climate Education*encompasses the formal and informal dissemination of knowledge and practices related to climate change, mitigation, and adaptation.

*Sustainable Developmen**t*** is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland 43).

Knowledge Systems include both scientific and indigenous frameworks for understanding and responding to environmental change.

Conceptual Framework

The conceptual framework for this study is built around the intersection of three interrelated constructs which provide the foundation for analyzing how linguistic and epistemological inclusion can strengthen climate education and promote sustainable development within Nigeria's diverse sociolinguistic landscape.

Indigenous Languages and Knowledge Systems: Indigenous languages are more than mere tools for communication—they are carriers of collective memory, traditional knowledge, and environmental wisdom. In Nigeria, where over 500 languages are spoken, indigenous languages encode rich ecological information rooted in centuries of close interaction with local environments (Egbokhare 17). This knowledge, transmitted orally through proverbs, folktales, songs, and rituals, often includes sustainable practices for farming, water conservation, weather forecasting, and

biodiversity management. However, the formal education system and environmental discourse in Nigeria remain dominated by colonial languages, especially English, marginalizing these indigenous perspectives and knowledge systems (Odumuyiwa 88). Integrating indigenous languages into climate education not only enhances communication but also legitimizes and preserves these systems of knowledge, which are crucial for community-based adaptation strategies.

Climate Change and Environmental Education: Climate education plays a vital role in building public awareness, promoting behavioural change, and fostering resilience in the face of environmental challenges. However, in the Nigerian context, climate education remains largely top-down, urban-centric, and delivered in English—a language not spoken fluently by many rural populations (Onyema 213). As a result, critical information about climate risks and adaptive practices often fails to reach vulnerable communities. Bridging this gap requires rethinking climate education through culturally relevant and linguistically inclusive approaches. Scholars argue that indigenous education methods, when delivered in native languages, can significantly increase comprehension, ownership, and action at the grassroots level (Nkemjika 132). Environmental education that integrates indigenous perspectives ensures that learners connect climate concepts with local realities, thereby strengthening their capacity for environmental stewardship.

Multilingualism and Communication in Nigeria: Nigeria is characterized by complex multilingualism, where most citizens are fluent in at least one indigenous language alongside English or Pidgin. This linguistic diversity presents both a challenge and an opportunity for effective climate communication. On one hand, the dominance of English in media, policy, and education limits participation among non-English speakers; on the other hand, multilingualism offers a powerful platform for inclusive and decentralized communication strategies (Bamgbose 56). Harnessing multilingualism means adapting messages to fit the linguistic and cultural contexts of various communities. Radio broadcasts, community theatre, local songs, and oral storytelling in indigenous languages have already proven effective in disseminating health and development messages across Nigeria (Ushie 204). Extending these strategies to climate education could foster more democratic participation in environmental governance and reinforce the social legitimacy of climate action.

Theoretical Framework

This research is anchored in two complementary theoretical perspectives: eco-linguistics and participatory communication theory. These frameworks provide critical lenses for examining the relationship between language, environment, and inclusive communication in the context of climate education. They support the argument that indigenous languages are not only cultural artefacts but also dynamic tools that mediate human-environment interactions and foster grassroots engagement in sustainable development.

Eco-linguistics: Eco-linguistics, also known as ecological linguistics, explores how language shapes, reflects, and influences human relationships with the environment. It critiques dominant discourses that support ecological degradation while promoting linguistic practices that align with ecological sustainability (Stibbe 7). This perspective is particularly relevant to this study, as it foregrounds the role of indigenous languages in conveying environmental values and knowledge systems. In many Nigerian communities, indigenous expressions, metaphors, and oral traditions reflect a deep understanding of ecological balance and human responsibility towards

nature. For instance, proverbs such as “when the last tree dies, the last man dies” encapsulate environmental ethics embedded in local cultures.

Eco-linguistics also challenges the privileging of Western scientific discourse in climate education, arguing instead for a pluralistic approach that values diverse linguistic and epistemological perspectives (Fill and Mühlhäusler 34). By applying an eco-linguistic lens, this study examines how indigenous languages serve as repositories of sustainable ecological worldviews and how their integration into climate education can promote environmental consciousness rooted in cultural relevance.

Participatory Communication Theory: Participatory communication theory advocates for inclusive, bottom-up communication processes that empower local communities to actively engage in development and decision-making. Originating from development communication studies, this theory challenges top-down, didactic models of information transfer, proposing instead that dialogue, cultural relevance, and shared knowledge are essential for effective and democratic communication (Servaes 87). In the context of climate education, participatory communication recognizes the value of indigenous voices, languages, and knowledge systems in addressing environmental challenges.This framework is crucial to the present study because it emphasizes the need for climate education strategies that are not only linguistically accessible but also socially embedded. Participatory communication theory supports the use of indigenous languages in community-led discussions, radio broadcasts, traditional storytelling, and folk performances, ensuring that messages resonate with local experiences and values (Melkote and Steeves 216). It also encourages the co-creation of knowledge between experts and community members, fostering mutual respect and trust. Through this lens, the study investigates how indigenous languages can facilitate more inclusive and culturally meaningful climate communication across Nigeria’s multilingual landscape.

Research Methodology

This study adopted a qualitative, participatory approach grounded in ethnographic sensitivity to examine how Nigerian indigenous languages can be meaningfully integrated into climate education. Rather than imposing rigid assumptions, the methodology prioritized the voices of those on the frontline of environmental change—teachers, traditional custodians, youth activists, and local broadcasters—across three distinct language zones: Ibibio (Akwa Ibom), Yoruba (Osun), and Igbo (Enugu). These regions were chosen not only for their linguistic diversity but also for their lived exposure to climate threats like flooding, gully erosion, and unpredictable farming seasons.

In total, 45 participants shared their experiences through interviews and focus group discussions. The conversations were vibrant, revealing a tapestry of linguistic choices, indigenous metaphors, and knowledge-sharing practices. A secondary school teacher in Osun explained, “When I teach in Yoruba, especially about rainfall patterns and planting seasons, the students understand more deeply—these are things they hear at home too.” In a village near Uyo, a traditional elder described how folktales once told under moonlight served as early forms of environmental ethics: “Our stories spoke of the forest spirit that punishes waste. That’s how we taught children to respect nature.”

One of the most striking scenes came during a climate sensitization event in Enugu, where an elder spoke passionately in Igbo about ancestral warnings embedded in proverbs: "Ọnwụ anaghị akwụsị mmụọ mmiri", roughly translated as “death does not stop the spirit of rain.” Such expressions, layered with ecological wisdom, would have

been lost if only English had been used. Observations also revealed that students often switched between English and their mother tongues when trying to explain climate terms, suggesting an instinctive translanguaging process that formal curricula often overlook.

To ensure inclusivity, all research instruments were translated into local languages with the help of linguists. In one radio station in Ibadan, a young presenter explained, "We mix Yoruba and English deliberately—if we only speak English, many elders will switch off." This pragmatic code-switching highlights the communicative gap that monolingual climate policies often ignore.

The data were analyzed thematically, focusing on how language shaped both comprehension and trust. Emergent themes included the use of ecological metaphors, storytelling as a tool for climate instruction, and the barriers of formal schooling that marginalizes local languages. Participants repeatedly voiced frustration over the dominance of English in environmental education, with one youth activist asking pointedly, "If our parents don't understand the warning, how will they prepare for the floods?"

Ethically, the study respected local sensibilities, especially in cases where sacred knowledge was involved. Some elders requested that certain ritual explanations remain unpublished, and their wishes were honoured. Consent processes were multilingual and culturally sensitive, reinforcing trust in the research process. While challenges such as language translation and limited geographic scope were acknowledged, the study firmly illustrates the potential of indigenous languages as vehicles for climate resilience and intergenerational knowledge.

Observations and Analysis

Between February and March 2025, fieldwork conducted in three rural communities across Enugu (Igbo-speaking), Akwa Ibom (Ibibio-speaking), and Osun (Yoruba-speaking) States revealed that indigenous languages functioned not merely as a medium for translating climate change messages, but as an active vehicle for shaping local perceptions, values, and practices. The collected materials—pamphlets, posters, and recorded oral broadcasts—had been produced by local NGOs, community-based organisations, and government agricultural extension units, with the shared goal of educating villagers on climate change adaptation.

Igbo-language Climate Education Materials: The Igbo materials, collected from Nsukka LGA, were written in a blend of standard Igbo and local dialectal forms to maximise accessibility. One pamphlet titled Ihu Ọdịnihu Anyị ("Facing Our Future") used culturally grounded metaphors such as ọkụkọ na-efee efeghị ("a chicken that flies without direction") to illustrate the unpredictability of rainfall patterns caused by climate change. Farmers told me that such expressions "speak to the heart" more than English technical jargon (Okeke, 2022: 54).The pamphlets also integrated proverbs like onye ajụjụ adighị efu ụzọ ("a person who asks questions never loses their way") to encourage community dialogue around climate adaptation (Eze, 2021: 112). The use of proverbial wisdom positioned climate change not as an abstract scientific issue but as a shared moral and social responsibility.

Ibibio-language Climate Education Materials: In the Ibibio-speaking communities of Ikot Ekpene, the most striking materials were pictorial posters and audio messages broadcast on local radio. The posters used large illustrations of flooding farmlands and drought-cracked soil, accompanied by short Ibibio captions such as Mme afia isuan ke idọk ñkpọñ ("Our farmlands are crying")—a metaphor that personified the environment to evoke emotional engagement (Akpan, 2023: 37).The Ibibio texts were

particularly notable for blending Christian biblical references with indigenous cosmology, positioning environmental stewardship as both a divine mandate and an ancestral duty. This fusion allowed the message to resonate with both churchgoers and traditionalists, reinforcing shared responsibility for mitigation (Ekpo, 2022: 88).

Yoruba-language Climate Education Materials: In Osun State, I collected a series of Yoruba-language leaflets distributed during monthly farmers' meetings. The documents framed climate issues through the idiom ayé ò gbọ́dọ̀ bàjẹ́ ("the world must not be ruined"), which carries deep ethical undertones about maintaining harmony between humanity and nature (Oladipo, 2021: 65).Interestingly, the Yoruba materials were more didactic than the Igbo or Ibibio versions—they included step-by-step guidance on practices such as mulching (fi koriko bo ilẹ̀) and water harvesting (pamọ́ omi ojo), with accompanying illustrations (Adeyemi, 2023: 42). Farmers reported that the practical instructions, paired with culturally familiar idioms, helped them adopt new techniques more confidently than when similar advice was given in English (Bamidele, 2022: 104).

Cross-Community Insights: Across all three language contexts, the indigenous-language documents performed three critical functions:

Cultural Framing: They embedded scientific climate concepts within local metaphors, proverbs, and idioms, making the information relatable and morally charged.

Trust Building: Villagers were more willing to accept information from materials written in their mother tongue, perceiving them as authentic and community-driven rather than imposed (Nwachukwu, 2023: 59).

Behavioural Guidance: Materials that combined moral persuasion with clear, localized practical steps saw the highest uptake of adaptive practices, particularly in the Yoruba context.

What became clear is that integrating indigenous languages into climate education is not simply a translation exercise; it is a knowledge integration process that bridges scientific frameworks with lived cultural realities. The documents were not just linguistic tools but epistemic bridges, translating not only words but worldviews.

Presentation and Analysis of Data

The data gathered from fieldwork conducted in Akwa Ibom, Osun, and Enugu States in Nigeria revealed a rich tapestry of perspectives on the use of indigenous languages in climate education. A total of 45 respondents—comprising teachers, traditional leaders, youth activists, media practitioners, and NGO officials—provided insights into how local languages influence environmental awareness and action in their communities.

A prominent finding across all three regions was the enhanced accessibility and comprehension of climate-related messages when delivered in indigenous languages. An overwhelming 88% of participants agreed that people grasped these messages more effectively in their mother tongues. A teacher from the Ibibio-speaking area put it succinctly: "When we talk about erosion in English, many of our people just nod. But when we say 'mmọn ikot edem ke ama' [the land is being eaten], they understand the danger immediately." This sentiment was echoed throughout the interviews, particularly in areas where oral traditions are still strong.

Traditional leaders emphasized the longstanding role of indigenous proverbs and folklore in transmitting ecological knowledge. In Osun, a Yoruba elder referred to the proverb, "Igi gogoro ma gbodè ki o má to'ra rè wá" (A tall tree must bend so it does not fall), illustrating how environmental values are embedded in local wisdom. These

forms of expression, they noted, often carry moral undertones that resonate more deeply than formal education.

The influence of community radio was particularly notable. All six vernacular media practitioners affirmed that broadcasting in indigenous languages had significantly boosted public participation in environmental efforts. In Akwa Ibom, an Ibibio broadcaster noted that community elders and youth now collaborate to curb harmful practices like dry-season bushfires. A Yoruba presenter in Osun observed that climate discussions in Yoruba prompted listeners to share personal stories and concerns, making the topic feel relatable and urgent. In Enugu, an Igbo radio host reported a spike in community awareness after explaining the causes of flooding in local dialect.

Other compelling testimonials included a female Ibibio journalist whose radio segment, Nnyin ke Uforo [We and the Environment], inspired community clean-up efforts, and a Yoruba newscaster whose switch from English to Yoruba elicited more engagement in tree-planting initiatives. Similarly, an Igbo environmental reporter recounted how discussing erosion control using traditional trees led to farmers requesting seedlings via SMS.

Despite these successes, participants also highlighted challenges. These include the scarcity of climate education materials in indigenous languages, the absence of curriculum policies supporting such integration, and the perception among some youth that local languages are outdated. Nonetheless, the overall findings underscore the transformative potential of linguistic inclusion in promoting climate literacy and grassroots environmental action.

Vernacular Radio Programmes in Climate Education and Community Engagement

The six media practitioners interviewed unanimously emphasized the crucial role vernacular radio programmes play in enhancing public participation in local environmental initiatives such as bushfire prevention, waste management, and tree planting. Their testimonies reveal how broadcasting in indigenous languages bridges the gap between scientific climate information and community understanding, making environmental issues more relatable and actionable.

A radio broadcaster from the Ibibio-speaking region of Akwa Ibom reflected on the transformative power of communicating in the local language:“Once we started broadcasting in Ibibio about the dangers of setting fire to farmlands, the community elders joined us to speak on-air. Now, even the youths are cautious during dry season. They understand the message better in their own tongue.”This narrative highlights how indigenous language use fosters community ownership of environmental messages, involving both elders and younger generations.

Similarly, a Yoruba radio presenter from Osun State described how delivering climate talks in Yoruba personalized the issues for listeners:“When we air climate talks in Yoruba on Thursdays, people call in to share stories about changing rain patterns and how it affects their farms. The use of Yoruba makes it feel personal, not like some government message.”The presenter’s experience underscores that vernacular communication invites active audience participation by connecting scientific concepts to everyday lived realities.

An Igbo radio host from Enugu shared insights into how using Igbo to explain the link between blocked gutters and flooding raised awareness effectively:“We used our environmental slot to talk about ‘ime mmiri’ [flooding] in Igbo. Many people said they didn’t know the connection between blocked gutters and flooding until they heard it clearly explained in their language.”This shows the power of indigenous

languages to clarify environmental processes that may be obscured when communicated in a second language.

The female community journalist from Akwa Ibom described the success of a locally titled programme segment designed to foster communal responsibility for environmental cleanliness:"We created a segment called Nnyin ke Uforo [We and the Environment], and it made people more willing to participate in monthly clean-up exercises. They called in, offered ideas, and even volunteered to speak on the programme."Her testimony highlights how culturally resonant programming encourages dialogue and collective action beyond mere passive listening.

Another Yoruba newscaster explained the growing demand for environmentally focused shows after switching from English to Yoruba during broadcasts:"During our 'Atole Oko' [Farm Watch] segment, listeners have requested follow-up shows on planting trees around compound walls. These requests only came after we switched from English to Yoruba for the second half of the broadcast."This illustrates how indigenous language use can increase audience engagement and spur demand for more targeted environmental information.

Finally, an Igbo FM environmental reporter recounted how the use of Igbo led to a surge in community interest in traditional erosion control methods:"The day we talked about using traditional trees for erosion control in Igbo, we got over 20 SMS messages from farmers asking how to get seedlings. We realized that speaking in Igbo helped them see this as their own concern, not just government talk."This example confirms that vernacular communication not only raises awareness but also motivates practical action by aligning scientific solutions with local cultural frames.

Together, these narratives provide compelling evidence that vernacular radio broadcasting serves as a vital channel for climate education and community mobilization in Nigeria. By delivering environmental information in indigenous languages, these programmes foster deeper understanding, cultural relevance, and a stronger sense of responsibility among listeners, thereby enhancing sustainable development efforts at the grassroots level.

Discussion of Major Findings

The study affirms that indigenous languages are powerful instruments for environmental awareness and community mobilization. Their cultural grounding and contextual specificity make them particularly effective for delivering climate education in rural and semi-urban settings. In the Ibibio communities studied, for example, lessons on deforestation delivered in the local language significantly enhanced student engagement, with learners producing songs and drawings that reflected their understanding of ecological threats. This outcome supports the assertion by Ajayi (2021: 113) and Ojebuyi and Adekoya (2018: 74) that local languages have unmatched communicative strength in development contexts.

However, the research also highlights a persistent structural gap: formal education in Nigeria continues to privilege English, thereby distancing learners from the environmental realities embedded in their local context. This mirrors the critique of language policy in environmental education, where English dominance often undermines the relevance and accessibility of instruction (Ajayi, 2021: 118).A key insight from this study is the synergy between indigenous knowledge systems and participatory communication. Messages framed in familiar idioms and cultural references elicited more proactive community responses. This confirms Simpson's (2010: 87) argument that language is not merely a conduit for information but a carrier of worldview and cultural logic. In the Yoruba, Igbo, and Ibibio contexts

examined, the delivery of environmental messages in indigenous languages enhanced comprehension of complex issues such as erosion control, bushfire prevention, and sustainable waste management. These findings suggest that local linguistic frameworks can facilitate the internalization of abstract or technical environmental concepts.

Community radio emerged as a particularly effective channel for vernacular climate communication. Local-language programmes generated high listener engagement and inspired tangible community action—clean-up campaigns, tree planting, and open dialogues on climate risks. These results align with Nyamnjoh's (2005: 64) position that vernacular media foster participatory democracy and inclusive development. Media practitioners interviewed noted that culturally rooted metaphors, songs, and proverbs within these broadcasts resonated deeply with audiences, prompting both reflection and action.The study also reinforces eco-linguistic theory, which posits that language both reflects and shapes human relationships with the environment (Stibbe, 2015: 29). Culturally embedded ecological metaphors in indigenous languages—such as referring to rivers as "mothers" or forests as "ancestral homes"—strengthened emotional connections to nature. This emotional engagement, in turn, encouraged behavioural change, suggesting that ecological narratives embedded in local speech can be as influential as scientific evidence in driving sustainable practices.From a participatory communication perspective, the findings support Melkote and Steeves' (2001: 49) argument that development initiatives are more effective when communities are empowered to articulate their concerns in culturally meaningful ways. Climate education projects that excluded indigenous languages often failed to stimulate significant engagement, while those employing vernacular communication facilitated dialogue, feedback, and locally generated solutions.Traditional leaders, teachers, and youth activists played a crucial role in sustaining climate awareness efforts. Their involvement validates Okunoye's (2019: 212) view that indigenous knowledge systems are indispensable to environmental resilience in African societies. These stakeholders not only demonstrated a clearer understanding of environmental issues when communicated in their native languages but also took ownership of implementing solutions.

Conclusion

This study set out to explore the role of Nigerian indigenous languages in advancing climate education and fostering sustainable development by bridging Western scientific knowledge with local cultural perspectives. The findings have clearly demonstrated that indigenous languages are not merely communication tools but vessels of traditional ecological knowledge, communal values, and cognitive frameworks that shape people's relationship with the environment.By integrating these languages into climate education—especially through media, schools, and community outreach programmes—there is a greater likelihood of public understanding, behavioural change, and long-term community engagement in environmental sustainability. Participants across the board, from teachers and traditional leaders to youth activists and media practitioners, affirmed that vernacular communication makes climate messages more relatable, credible, and actionable. The study has shown that when local communities are addressed in their mother tongues, they are not passive recipients of information but active agents in co-creating solutions to climate challenges.Furthermore, the study validates the theoretical perspectives of eco-linguistics and participatory communication, which advocate for context-sensitive, inclusive, and culturally grounded approaches to communication

and development. The implications for educational policy, media programming, and climate advocacy are profound: to exclude indigenous languages from climate discourse is to marginalize the very populations most affected by environmental change. Decolonizing environmental communication in Nigeria by embedding indigenous languages and knowledge systems at the heart of climate education. Does not only strengthen the efficacy of climate action but also upholds linguistic and cultural diversity as essential pillars of sustainable development.

Recommendations and Suggestions for Further Research

Based on the findings of this study, several practical steps can be taken to strengthen the role of Nigerian indigenous languages in climate education and create more inclusive and culturally meaningful environmental communication.

First, government institutions such as the National Orientation Agency, the Federal Ministry of Environment, and the Nigerian Educational Research and Development Council should make indigenous languages a formal part of climate communication. Using local languages in public awareness campaigns, school programmes, and community dialogues would make climate messages clearer, more relatable, and more effective for diverse audiences. Policies should therefore reflect Nigeria's multilingual nature to ensure that environmental information reaches everyone, not just the English-speaking population.

Second, there is a pressing need to build the capacity of educators, broadcasters, and community journalists to communicate environmental information in indigenous languages. Training workshops and resources could help them translate complex climate concepts into familiar terms, using proverbs, idioms, and stories that resonate with local cultural experiences. This would make scientific information less abstract and more grounded in daily realities.

Third, environmental literacy initiatives should begin at the community level. Local NGOs, civil society groups, and traditional leaders can collaborate to produce educational materials in indigenous languages and use creative forms of communication—such as folk tales, street theatre, and radio dramas—to engage people. These culturally rooted approaches would inspire collective responsibility for environmental protection.

Fourth, climate education needs to be incorporated into school curricula in both English and regional indigenous languages. Teaching environmental topics in children's mother tongues can improve comprehension, nurture curiosity, and instil a sense of shared responsibility for the environment from an early age.

Fifth, scholars and language experts should work together to develop glossaries of climate-related terms in Nigerian languages. These resources would make it easier for teachers, students, and media practitioners to use accurate and consistent terminology when discussing environmental issues.

Looking ahead, further research could explore how different indigenous languages use metaphors, idioms, and storytelling to express environmental ideas, as well as examine how teaching in local languages influences long-term behaviour change. Future studies should also include less-documented languages across Nigeria's diverse regions to ensure broad inclusion. Finally, stronger collaboration between linguists, scientists, and community knowledge holders will be essential to develop environmental education models that are both scientifically grounded and culturally meaningful.

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