

Investigating Cultural Factors Influencing Environmental Degradation and Climate Change Mitigation Strategies in Nigeria

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ABSTRACT

Environmental degradation and climate change continue to affect livelihoods, ecosystems, and sustainable development in Nigeria. Although climate mitigation has received increasing policy attention, responses often emphasise technical solutions without sufficiently considering the cultural beliefs, social norms, and livelihood conditions that shape environmental behaviour. This study examines how these factors influence perceptions of environmental degradation and climate change mitigation in central Nigeria. A mixed-methods approach was adopted, combining survey responses, oral interviews, and direct observation. A total of 425 respondents drawn from five ethnic groups (Ribina, Mwangavul, Berom, Anaguta and Ron) within Plateau and Bauchi States of Nigeria participated in the study. The findings reveal a clear gap between awareness of climate change and engagement in mitigation practices. While many respondents recognised climate change as a reality, substantial numbers reported limited participation in tree planting and other conservation activities. Oral accounts also showed that some respondents understood climate-related changes through divine or providential explanations. Economic conditions were another significant influence, particularly in sustaining dependence on firewood and limiting the adoption of cleaner alternatives. The study argues that climate mitigation efforts in Nigeria need to move beyond awareness creation to address the cultural meanings, economic realities, and community practices that shape environmental action. Culturally responsive and community-based approaches that work through trusted social institutions may therefore provide a more practical basis for strengthening climate mitigation at the local level.

Keywords: environmental degradation, climate change, mitigation strategies, culture, Nigeria

INTRODUCTION

Environmental degradation has become one of the persistent ecological and developmental challenges confronting Nigeria. Its manifestations include deforestation, soil erosion, desertification, flooding, pollution, and the depletion of land and vegetation resources that support agriculture and rural livelihoods. These pressures have become more pronounced under changing climatic conditions, increasing the vulnerability of communities whose economies and everyday survival depend heavily on natural resources. Environmental change in Nigeria must therefore be understood not only as an ecological problem, but also in relation to the social, economic, historical, and cultural conditions within which people interact with their environment (Jellason et al., 2023).

The wider African context provides an indication of the increasing pressure on communities and ecosystems. The World Meteorological Organization's *State of the Climate in Africa 2025* reports that Africa is warming faster than the global average and that weather- and climate-related hazards are imposing substantial human and socioeconomic costs. In 2025, such hazards affected at least 13 million people and resulted in more than 3,000 reported deaths across the continent. Floods accounted for more than half of the reported extreme-weather events, while severe flooding in Nigeria in May 2025 alone caused more than 200 deaths. The report also identifies drought, ocean warming and acidification, sea-level rise along parts of the African coastline, and the continued loss of the continent's glaciers as important manifestations of changing climatic conditions. At the same time, significant weaknesses remain in early-warning and preparedness systems, with fewer than

40 per cent of African countries reporting adequate multi-hazard early-warning capabilities (WMO, 2026). These conditions demonstrate the broader environmental pressures within which Nigeria's own experiences of degradation and climate change need to be considered.

Climate change, however, does not by itself account for the full extent of environmental degradation in Nigeria. Environmental pressures have developed through the interaction of population growth, agricultural expansion, deforestation, extractive activities, inadequate infrastructure, poverty, and changing patterns of resource use. The environmental problems experienced by Nigerian communities are therefore connected to both climatic pressures and the ways in which land and natural resources are accessed, used, and managed. Historical scholarship further indicates that colonial and postcolonial resource-management systems altered established relationships between communities and their environments, with resource extraction receiving greater emphasis than communal conservation in some contexts (Ifeanyi-Obi et al., 2023). These historical changes contributed to the weakening of some indigenous systems of environmental management and continue to provide an important context for understanding contemporary patterns of land and resource use.

The social and cultural dimensions of environmental change are particularly important because communities do not respond to environmental pressures solely through scientific or technical knowledge. Research among Nigerian farming and rural communities shows that environmental change may be understood through a combination of practical, social, religious, and moral interpretations. Farmers and households may respond to environmental uncertainty by changing crops, diversifying livelihoods, borrowing food, selling assets, or adjusting planting patterns, while at the same time interpreting environmental events through religious or spiritual understandings (Jellason et al., 2023). Environmental behaviour is consequently embedded in everyday livelihood decisions, social relationships, belief systems, and accumulated local experiences.

Indigenous knowledge and community practices also form part of this relationship between people and their environment. Historically, local norms concerning the use of land, vegetation, water, and other natural resources have been transmitted through families, community institutions, and intergenerational teaching (Okafor et al., 2024). Such systems provide important examples of how environmental knowledge can be produced and maintained within communities rather than solely through formal institutions. Their continued application, however, may be constrained by economic hardship, energy poverty, urbanisation, changing livelihood systems, and increasing pressure on natural resources. The existence of local environmental knowledge therefore does not necessarily mean that communities have the material capacity to apply all of the practices associated with it.

This distinction between knowledge and action is important for understanding the limitations of awareness-based approaches to environmental mitigation. Increased knowledge of climate change does not necessarily produce corresponding changes in behaviour. People may recognise environmental risks while continuing practices that contribute to degradation because of immediate livelihood needs, limited alternatives, social expectations, or culturally grounded interpretations of environmental change. For example, where households depend on readily available sources of energy or natural resources for their livelihoods, awareness of environmental consequences may not be sufficient to alter established practices. Mitigation strategies that concentrate primarily on disseminating scientific information may consequently have limited effect when they do not address the cultural and material circumstances in which environmental decisions are made (Ifeanyi-Obi et al., 2023). The central concern of this study is that these measures are unlikely to be sufficient when considered separately from the cultural and material circumstances of the communities expected to implement them. Environmental policies and mitigation strategies operate within existing belief systems, livelihood practices, social relationships, and local understandings of environmental change. Examining these relationships provides a basis for understanding why awareness of environmental problems may not always translate into mitigation behaviour.

The paper therefore focuses on how cultural beliefs, indigenous knowledge, livelihood pressures, and everyday environmental practices shape the interpretation of environmental degradation and climate change mitigation in Nigeria. By placing these factors within their historical and socioeconomic contexts, the study seeks to demonstrate the importance of approaches that are socially relevant and locally grounded in addressing environmental change. . Particular attention is given to the interaction among cultural beliefs,

indigenous knowledge, livelihood pressures, and people's responses to environmental change. The study consequently considers environmental behaviour as part of a wider social and cultural context in which decisions about natural resources are made.

The Nigerian Climate and Cultural Behaviour

The environmental pressures confronting Nigeria are diverse and vary across ecological and social settings and Nigeria's cultural diversity is an important consideration in examining environmental behaviour. The country is home to approximately 250 ethnic groups, with distinct traditions and belief systems that influence how environmental degradation and climate change mitigation are understood. Central Nigeria contains numerous minority ethnic groups, including the Ngas, Mwagavwul, Ron, Berom, Ribina, and Afiezere,. These groups are located in Plateau and Bauchi States and share similar tropical climatic conditions as well as some cultural affiliations. Understanding how such communities interpret and respond to environmental change is therefore relevant to the development of environmental policies and interventions that reflect local circumstances (Onah et al., 2016). Historically, communities in this region developed traditional approaches to landscape management, land use, and responses to environmental change. The disruption of these systems during the colonial period is identified in the literature as an important turning point, particularly where resource extraction was prioritised over indigenous environmental stewardship (Okpamen, 2015). The alteration of traditional governance structures subsequently affected some community-based approaches to resource management and conservation (Aladelokun, 2023). This historical dimension is important because contemporary environmental behaviour cannot be separated entirely from the changes that have taken place in the institutions and practices through which communities have traditionally managed their environments.

Theoretical Framework

This study is anchored in social learning theory, indigenous knowledge systems, and cultural theory of risk. These perspectives are complementary rather than competing, and together they help explain how environmental behaviour is learned, interpreted, and reproduced within communities. Social learning theory is useful for explaining how environmental practices are transmitted through observation, imitation, and reinforcement. In many settings, behaviours related to land use, tree cutting, fuel choice, and conservation are learned socially over time rather than through formal environmental education. This makes the household, the community, and local institutions important sites of environmental reproduction. Indigenous knowledge systems provide a second lens by showing that environmental stewardship may already be embedded in local customs, traditions, and community governance. Such systems often regulate access to land and resources in ways that support ecological balance. Their significance lies not only in their practical utility but also in the moral authority they carry within local contexts. Cultural theory of risk helps explain why the same environmental threat may be interpreted differently across groups. Climate change may be framed as a scientific problem, a natural cycle, a spiritual event, or a governance failure depending on the values and worldview of the observer. This matters because people respond not only to hazards themselves but also to the meanings they attach to those hazards.

METHODOLOGY

Research Design

This study employed a mixed-methods research design to examine how cultural beliefs, social norms, and livelihood conditions shape perceptions of environmental degradation and the uptake of climate change mitigation strategies in Nigeria. The design was selected because the research questions required both an assessment of patterns across respondents and an understanding of the meanings and circumstances underlying those patterns. Quantitative data provided information on respondents' levels of awareness and reported environmental practices, while oral interviews and direct observation provided contextual accounts of how participants interpreted environmental change and the factors influencing their responses. The integration of these sources was particularly important because reported awareness does not necessarily correspond with environmental behaviour. Survey data could identify the prevalence of particular views and practices, while oral accounts provided explanations of why such practices were maintained or changed. Observation further

provided an opportunity to consider reported behaviour alongside visible environmental conditions and everyday household and community practices.

Study Area and Population

The study was conducted among residents of selected rural communities in Bauchi and Plateau States and in Jos, the major urban centre in Plateau State. The rural communities included Tilden Fulani and Babale in Bauchi State, and Dikibin, Kombun, Maikatako, and Fan in Plateau State. The inclusion of rural and urban locations enabled the study to consider environmental perceptions and practices within contrasting residential and livelihood contexts. The study population comprised male and female respondents aged 20–70 years. A total of 425 respondents participated in the survey, while 115 key informants participated in oral interviews. The survey included respondents from both rural communities and Jos (urban centre). The community-level distribution supplied for the study comprises 35 respondents from Tilden Fulani, 35 from Babale, 35 from Dikibin, 25 from Kombun, 35 from Maikatako, 35 from Fan, and 225 from Jos.

Sampling Procedure

Respondents were recruited using simple random sampling, with attention to age, place of residence, and livelihood background. The sampling approach was intended to capture variation in respondents' experiences of environmental change and their knowledge and practices concerning climate change mitigation. The selection of both rural and urban respondents was important to the research because people's experiences of environmental change are shaped partly by the settings in which they live and the livelihood activities on which they depend. Rural respondents were drawn from the identified communities in Bauchi and Plateau States, while the urban component comprised respondent's resident in Jos. The oral component involved 115 key informants. Key informants were selected to obtain detailed accounts of cultural beliefs, indigenous knowledge, religious interpretations, livelihood pressures, and environmental practices that could not be adequately captured through the structured questionnaire.

Data Collection

Data were collected using a structured questionnaire, a semi-structured oral interview guide, and an observation record. Fieldwork for the oral interviews was conducted between December 2025 and May 2026. The structured questionnaire generated quantitative data on respondents' awareness of climate change, understanding of environmental degradation, tree-planting behaviour, fuel use, conservation practices, and perceptions of responsibility for environmental protection. The use of a structured instrument enabled responses to be organised systematically and compared across respondents and locations. The semi-structured interview guide was used with the 115 key informants to explore issues requiring greater contextual explanation. The interviews focused particularly on cultural and religious interpretations of environmental and climatic changes, indigenous knowledge, livelihood conditions, and the reasons for maintaining or changing environmental practices. The semi-structured format provided consistency across interviews while allowing participants to explain their experiences and understandings in their own terms. The oral interviews were recorded and subsequently transcribed for analysis. The transcripts constituted the principal qualitative dataset, while observational records provided additional contextual information concerning visible environmental conditions and routine household and community practices. Observation was used to complement, rather than replace, respondents' accounts, particularly where everyday environmental practices might not be fully captured through self-reporting.

Quantitative Data Analysis

Quantitative data obtained from the structured questionnaires were organised and analysed using descriptive statistics. Frequencies and percentages were calculated to summarise respondents' characteristics and the distribution of responses relating to climate-change awareness, perceptions of environmental degradation, tree planting, fuel use, conservation practices, and responsibility for environmental protection. The quantitative analysis was primarily descriptive because the principal purpose of the survey was to establish patterns in

environmental awareness, perceptions, and reported practices. Inferential analysis was therefore applied only where it directly addressed relationships between categorical variables relevant to the research questions.

Qualitative Data Analysis

The qualitative data from the oral interviews were analysed using **NVivo**. The recorded interviews were first transcribed, after which the transcripts were organised and imported into NVivo for systematic coding. The analysis involved identifying statements and passages relevant to the study's central concerns, including cultural beliefs, indigenous knowledge, religious interpretations, livelihood pressures, environmental change, and mitigation practices. Initial codes were developed from recurring issues in the interview material and from the themes addressed by the research questions. Related codes were subsequently grouped to identify broader patterns and themes within the data. The qualitative analysis therefore focused not only on the frequency with which particular issues occurred, but also on the meanings participants attached to environmental change and the explanations they provided for their environmental practices. The qualitative findings were then considered alongside the quantitative results and observational evidence. This process of integration enabled the study to examine areas of convergence and divergence between what respondents reported in the survey, what they explained during oral interviews, and what was observed in the study communities.

Integration of Quantitative and Qualitative Evidence

The mixed-methods design was completed through the integration of the three sources of evidence. Quantitative findings established patterns in respondents' awareness and reported environmental practices, while qualitative accounts helped explain the cultural, religious, and livelihood circumstances associated with those patterns. Observational evidence provided an additional contextual basis for interpreting reported practices. The integration was particularly relevant to examining the relationship between environmental knowledge and behaviour. Rather than assuming that awareness automatically leads to mitigation, the analysis considered how knowledge interacted with cultural beliefs, livelihood requirements, available alternatives, and everyday environmental practices. This allowed the study to examine environmental behaviour as a socially and materially situated phenomenon rather than as a simple outcome of awareness.

Ethical considerations.

The study obtained ethical approval from Plateau State University, research ethics committee and adhered to the principles of informed consent, voluntary participation, confidentiality, privacy, and responsible research conduct, as required by the ethical conduct requirements.

Findings

Findings from a total sample of 425 respondents, comprising 225 rural respondents (52.9%) and 200 urban respondents (47.1%) is reported. Quantitative findings are presented using frequencies and percentages to indicate the distribution of key climate-mitigation behaviours within the study sample. These patterns are then interpreted alongside qualitative evidence from interviews and observations. The quantitative results should be understood as descriptive of the surveyed participants and are not intended to represent all young people or all communities in Nigeria.

Environmental mitigation practices

The quantitative results reveal a substantial gap between awareness of environmental problems and reported participation in practical mitigation activities. Overall, only 110 respondents (25.9%) reported planting trees during the previous 12 months, while 315 respondents (74.1%) reported no tree-planting activity. Similarly, 97 respondents (22.8%) had participated in conservation activities such as wetland protection or community clean-ups, whereas 328 respondents (77.2%) had not participated in such activities.

Reported efforts to reduce individual carbon footprints were also limited. Only 119 respondents (28.0%) stated that they regularly or often recycled waste, saved energy, or reduced emissions. In contrast, 306 respondents (72.0%) reported that they rarely or never engaged in such practices. Environmental stewardship, including

advocacy, volunteering, and participation in community environmental action, recorded the lowest level of involvement: only 82 respondents (19.3%) reported participating, while 343 respondents (80.7%) reported no involvement.

Table 1: Reported environmental mitigation practices by location

Theme	Indicative Behaviour	Rural (n = 225)	Urban (n = 200)	Total (N = 425)
Tree-planting participation	Reported planting trees within the last 12 months	68 (30.2%)	42 (21.0%)	110 (25.9%)
Non-participation in tree planting	Did not plant trees within the last 12 months	157 (69.8%)	158 (79.0%)	315 (74.1%)
Conservation involvement	Took part in wetland protection, clean-ups, or similar activities	45 (20.0%)	52 (26.0%)	97 (22.8%)
No conservation involvement	Did not take part in conservation activities	180 (80.0%)	148 (74.0%)	328 (77.2%)
Carbon-footprint reduction	Regularly or often recycled waste, saved energy, or reduced emissions	52 (23.1%)	67 (33.5%)	119 (28.0%)
Limited carbon-footprint reduction	Rarely or never practiced recycling or energy-saving behaviour	173 (76.9%)	133 (66.5%)	306 (72.0%)
Environmental stewardship	Engaged in advocacy, volunteering, or community environmental action	38 (16.9%)	44 (22.0%)	82 (19.3%)
No stewardship involvement	Did not engage in advocacy or volunteering	187 (83.1%)	156 (78.0%)	343 (80.7%)

The table shows that non-participation was dominant across all four measured mitigation indicators. Tree planting was more commonly reported among rural respondents (30.2%) than urban respondents (21.0%). By contrast, urban respondents reported higher participation in conservation activities (26.0% compared with 20.0%), carbon-footprint reduction practices (33.5% compared with 23.1%), and environmental stewardship activities (22.0% compared with 16.9%). Nevertheless, the majority of respondents in both rural and urban locations reported no participation in most environmental activities. These results indicate that recognition of environmental change does not necessarily translate into sustained mitigation behaviour. Within the study sample, the low levels of participation in tree planting, conservation, carbon-footprint reduction, and community stewardship suggest that environmental action may be constrained by factors beyond awareness alone. The qualitative findings help explain these constraints.

Interview and observational evidence showed that some participants interpreted climate-related events through providential or spiritual frameworks, including the belief that climatic stress is an act of God. Participants who expressed this view often regarded human mitigation efforts as limited in their capacity to influence environmental outcomes. This interpretation appeared to reduce the perceived urgency of activities such as tree planting, waste reduction, and sustainable resource management. This qualitative finding should be interpreted as a recurring theme rather than a population-wide estimate because the present dataset does not provide a frequency or percentage for respondents holding providential explanations. The evidence nevertheless indicates that beliefs about divine causation can shape how individuals assign responsibility for environmental change and assess the value of mitigation action.

Qualitative accounts further indicated that economic conditions, access to alternatives, and established household practices influenced environmental behaviour. Participants described continued dependence on firewood for cooking, including among some urban households, because alternative energy sources were perceived as costly, unreliable, or inaccessible. The accounts suggest that reliance on wood fuel cannot be interpreted solely as cultural preference; it is also connected to affordability, energy access, household survival, and familiarity with traditional cooking practices. Accordingly, the low levels of reported mitigation activity in Table 1 should be read within the context of material constraints. Environmental campaigns that focus only on awareness may have limited effect where households lack affordable alternatives to environmentally harmful practices. Qualitative evidence also suggest that everyday interaction with the natural environment shaped environmental understanding, particularly among rural participants. Rural respondents described observing declining soil fertility, reduced crop yield, erosion, and seasonal uncertainty through farming and other livelihood activities. These experiences made environmental degradation more immediate and practical than it appeared to some urban respondents. Among respondents from the Ribina and Anaguta ethnic groups participants stated that primary and secondary school education provided limited information on climate-mitigation strategies. However, they reported acquiring practical environmental knowledge by observing climate-related changes on farms and through their direct interaction with the environment. This finding indicates that environmental knowledge is developed not only through formal education but also through experiential learning, household practices, farming activities, and community interaction.

DISCUSSION

The findings demonstrate that environmental awareness did not consistently translate into environmental action among the 425 respondents surveyed. Participation was limited across all four indicators of mitigation behaviour. Only 110 respondents (25.9%) reported planting trees within the previous 12 months, while 315 (74.1%) had not planted any trees. Similarly, 97 respondents (22.8%) had participated in conservation activities such as community clean-ups, whereas 328 (77.2%) had not. Practices associated with personal carbon-footprint reduction were reported by 119 respondents (28.0%), while 306 respondents (72.0%) rarely or never recycled waste, saved energy, or reduced emissions. Participation in environmental advocacy, volunteering, or related community activities was even lower: 82 respondents (19.3%) reported such involvement, compared with 343 (80.7%) who reported none. These figures indicate that environmental action was not a routine practice for most participants, even though the qualitative evidence showed that respondents were familiar with environmental decline and its effects.

The rural–urban pattern requires a careful interpretation. Rural respondents reported higher participation in tree planting than urban respondents: 68 rural respondents (30.2%) compared with 42 urban respondents (21.0%). This difference is understandable in communities where farming, land use, and household livelihoods remain closely connected to the condition of the soil, vegetation, and surrounding landscape. Rural participants encounter environmental change through declining soil fertility, erosion, reduced crop performance, and irregular seasons. These experiences give environmental degradation a direct livelihood meaning. However, rural respondents did not record higher participation across all mitigation indicators. Urban respondents reported greater involvement in conservation activities, with 52 participants (26.0%) compared with 45 rural participants (20.0%). They also reported higher levels of carbon-footprint reduction 67 respondents (33.5%) compared with 52 rural respondents (23.1%) and environmental stewardship, with 44 respondents (22.0%) compared with 38 (16.9%). The results therefore do not support a simple conclusion that rural participants were generally more environmentally active than urban participants. Rather, the location-specific differences suggest that environmental action took different forms in the two settings. Differences in rural - urban responses also caution against treating environmental awareness as a single, uniform condition. In the rural communities, environmental knowledge was often connected to direct observation and livelihood experience. In urban settings, environmental issues were less frequently encountered through farming but could be expressed through organised activities, recycling, energy-saving practices, clean-ups, or other forms of civic participation. The relevant distinction is therefore not simply between “more aware” and “less aware” respondents. It concerns the relationship between knowledge, daily experience, available opportunities, and the material resources required to act. A respondent may understand the effects of environmental degradation but lack access to land for tree planting, affordable clean energy, waste-recycling facilities, or an organised community programme through which participation can occur.

Additionally, the qualitative findings further show that cultural and religious interpretations influenced how respondents understood responsibility for environmental change. Some participants interpreted climate-related stress as an act of God or as part of a wider spiritual order. This interpretation should not be reduced to ignorance or dismissed as an absence of environmental knowledge. It provides a framework through which participants explained the causes of environmental events and assessed the extent to which human beings could influence them. However, when environmental change is viewed primarily as divinely determined, human mitigation may appear less urgent or less consequential. This helps explain why recognition of climate change did not necessarily produce tree planting, waste reduction, sustainable land management, or other forms of practical intervention.

The significance of this finding lies in the distinction between recognising environmental change and believing that individual or collective action can alter its effects. The former concerns awareness; the latter concerns agency. The findings suggest that some respondents possessed knowledge of environmental degradation but did not always connect that knowledge to a clear sense of human responsibility or practical possibility. Consequently, environmental communication that provides information without addressing local explanations of risk and responsibility may have limited influence. In the communities examined, mitigation messages are more likely to gain practical meaning when they are connected to existing moral, religious, and social frameworks. Faith leaders, elders, women's associations, farmers' groups, and youth organisations may therefore serve as important channels for linking environmental responsibility with values that communities already recognise. Economic conditions constituted a second major influence on environmental behaviour. The continued use of firewood, including among some urban households, was associated in the participants' accounts with cost, unreliable access to alternative energy sources, and familiarity with established cooking practices. This evidence indicates that dependence on firewood cannot be explained by cultural preference alone. For households operating under financial pressure, an environmentally harmful practice may also be the most accessible or dependable option available. The implication is important for policy: asking households to abandon firewood without addressing the price, availability, and reliability of alternative energy sources places the responsibility for mitigation on households while leaving the structural cause of the practice unchanged.

The low levels of reported carbon-footprint reduction support this interpretation. Only 28.0% of respondents reported that they regularly or often recycled waste, saved energy, or reduced emissions. The proportion was higher among urban respondents (33.5%) than rural respondents (23.1%), but even in the urban group, approximately two-thirds of respondents reported limited or no engagement in these practices. This pattern suggests that opportunities for environmentally responsible behaviour were not consistently available or institutionalised. Recycling, energy conservation, and emission reduction depend not only on personal commitment but also on waste-collection systems, household income, energy infrastructure, public information, and the availability of practical alternatives. The findings also demonstrate the importance of sociocultural learning in the development of environmental knowledge. Among the Ribina and Anaguta ethnic group respondents, participants reported that primary and secondary education provided limited knowledge of climate-mitigation strategies. At the same time, they explained that they acquired practical knowledge by observing changes on their farms and by engaging directly with their physical environment during childhood. This account shows that formal education was not the only, or necessarily the most influential, source of environmental learning for these participants. Knowledge was also developed through observation, participation in household and agricultural activities, conversations with community members, and repeated encounters with changing environmental conditions.

This evidence supports the argument that environmental learning is socially produced. Young people do not acquire environmental understanding only through textbooks or classroom instruction; they also learn through what parents, elders, farmers, religious leaders, and other community members say and do. They observe which environmental practices are encouraged, which are tolerated, and which are treated as unavoidable. Learning and action are therefore connected through social relationships. Where young people observe tree planting, soil conservation, careful resource use, or collective clean-up as valued community practices, environmental knowledge may be reinforced through participation. Where they observe dependence on firewood, indiscriminate waste disposal, or the acceptance of environmental decline as inevitable, awareness may not develop into action. The Ribina evidence is particularly important because it clarifies the relationship

between experiential knowledge and formal education. The participants did not suggest that schooling was entirely irrelevant; rather, they identified a limitation in the extent to which formal education addressed concrete mitigation strategies. Their practical environmental understanding came from seeing the effects of environmental change on farms and from interpreting those effects within the community. This suggests that environmental education would be more effective if it connected classroom content to local experiences, including soil degradation, crop performance, erosion, changing rainfall patterns, household energy use, and indigenous resource-management practices. Such an approach would allow formal education to strengthen, rather than displace, existing forms of community-based learning.

The results also have implications for the design of environmental interventions. The quantitative findings show that limited participation was not confined to one activity: more than two-thirds of respondents reported no tree planting, no conservation involvement, limited carbon-footprint reduction, or no environmental stewardship. The qualitative findings explain this pattern through the combined effects of belief, economic pressure, limited institutional support, and the way environmental knowledge is transmitted. It would therefore be inadequate to design an intervention around awareness campaigns alone. A more appropriate strategy would combine practical resources with locally credible forms of communication. For example, tree-planting programmes would require access to seedlings, land, follow-up support, and community participation; clean-energy programmes would need to address affordability and reliability; and conservation campaigns would need to work through organisations that already possess local trust.

The study's contribution lies in showing that mitigation behaviour among the sampled respondents was shaped by the interaction of three conditions: whether participants understood environmental change, whether they believed human action could make a difference, and whether they had the resources and social support required to act. The figures indicate the extent of limited participation, while the interviews and oral accounts explain why awareness did not automatically produce behavioural change. Environmental policy must therefore be responsive not only to the technical requirements of mitigation but also to the social conditions under which people interpret and practise it. These conclusions should be restricted to the surveyed respondents and the communities represented in the study. The sample provides useful evidence of the relationship between cultural interpretation, livelihood pressure, sociocultural learning, and environmental action within the study context, but it does not establish that all Nigerian communities hold the same views or display the same behaviour. Nigeria's ethnic, religious, ecological, and economic diversity means that the influence of spiritual interpretation, household energy use, formal education, and community institutions may differ across locations. The findings nonetheless provide a strong basis for further comparative research involving additional ethnic groups, ecological zones, and rural–urban settings.

LIMITATIONS AND FUTURE RESEARCH RECOMMENDATION

This study has some limitations that should be considered when making judgements on the findings. The study is concerned primarily with the cultural and social dimensions of environmental degradation and climate-change mitigation in Nigeria and It does not attempt to provide a comprehensive assessment of the physical causes, magnitude, or spatial distribution of environmental degradation across the country. Consequently, the findings should be understood as an examination of how cultural beliefs, social practices, livelihood conditions, and local knowledge influence environmental behaviour rather than as a complete account of Nigeria's environmental challenges. Secondly, the cultural diversity of Nigeria presents a significant limitation to generalisation. The country comprises numerous ethnic groups, languages, religious traditions, ecological zones, and livelihood systems. Cultural interpretations of environmental change therefore vary considerably between communities. Findings derived from particular communities or groups cannot automatically be applied to the Nigerian population as a whole. This limitation is particularly important because climate-related experiences differ between agricultural, pastoral, riverine, forest, urban, and semi-arid communities. Also, the study relies substantially on qualitative evidence, including community perspectives, oral accounts, existing studies, and interpretations of cultural practices. Such evidence provides important insights into how people understand environmental change, but it is influenced by individual experience, memory, social position, and the circumstances in which information is provided. Participants may also present socially acceptable accounts of their environmental practices or may interpret environmental events through religious or cultural frameworks that are difficult to assess independently. lastly, the study cannot

completely separate cultural influences from economic and institutional constraints. Environmental practices are often shaped simultaneously by poverty, access to land and energy, livelihood requirements, government policy, infrastructure, and availability of alternatives. For example, continued dependence on wood fuel or pressure on agricultural land may reflect economic necessity rather than cultural preference alone. Finally, the study captures environmental perceptions and mitigation practices within a particular period. Cultural attitudes, livelihood strategies, government policies, and experiences of climate-related events are not static and may change over time. The findings should therefore be regarded as a contextual account rather than a permanent representation of environmental behaviour in Nigeria. Despite these limitations, the study provides useful insight into the relationship between cultural interpretation, livelihood pressures, indigenous knowledge, and environmental action, while identifying areas requiring further comparative and interdisciplinary research. Further research should investigate specific ethnic and cultural communities in greater depth. Ethnographic and anthropological studies could document indigenous environmental knowledge, customary rules governing natural-resource use, traditional conservation practices, and the ways these systems have changed under the influence of Christianity, Islam, modern education, urbanisation, commercial agriculture, and changing economic conditions.

CONCLUSION

The study concludes that effective climate mitigation in the selected communities requires more than the dissemination of environmental information. Interventions must connect scientific knowledge with local experience, cultural interpretation, and material realities. Environmental education should be taught at primary and secondary levels. Community institutions should form an important part of this process. Faith leaders, elders, women's associations, farmers' groups, youth organisations, and local environmental bodies can help translate climate information into forms that are socially meaningful and locally credible. Their involvement would make it possible to present environmental responsibility not as an external demand but as an extension of community values, livelihood protection, intergenerational responsibility, and social well-being. The findings should be interpreted within the limits of the study sample and should not be generalised to all Nigerian communities. Nigeria's ethnic, religious, ecological, and socioeconomic diversity means that environmental beliefs and mitigation practices may differ substantially across regions. Nevertheless, the study provides evidence that cultural meaning, economic necessity, and community-based learning are central to the formation of environmental behaviour. Sustainable mitigation in comparable Nigerian communities will therefore depend on policies and programmes that combine scientific information with local knowledge, affordable alternatives, and sustained community participation.

REFERENCES

1. Aladelokun, A. O. (2023). Management of drought and desertification for sustainable agricultural development in Nigeria. *International Journal of Advanced Engineering, Management and Science*, 9(6), 48–55. <https://doi.org/10.22161/ijaems.96.9>
2. Ayiti, O. M., Aladelokun, A. O., Akanle, O. G., & Ayodele, M. B. (2024). Environmental conservation and sustainability in South West Nigeria: A comparative analysis. *Advances in Environmental Waste Management & Recycling*, 7(1), 1–7.
3. Danjuma, M. N., Mohammed, S., & Daura, U. S. (2014). Mitigation strategies to environmental degradation in Nigeria. *Journal of Environment and Earth Science*, 4(21), 38–51.
4. Ifeanyi-Obi, C. C., Wigwe, C. C., Adesope, O. M., & Obafemi, A. (2023). Traditional perceptions of climate change phenomenon influencing adaptation decisions among women crop farmers in southern Nigeria. *Journal of Agricultural Extension*, 27(2), 15–27. <https://doi.org/10.4314/jae.v27i2.2>
5. Jellason, N. P., Conway, J. S., & Baines, R. N. (2023). Exploring smallholders' cultural beliefs and their implication for adaptation to climate change in North-Western Nigeria. *The Social Science Journal*, 60(3), 561–576. <https://doi.org/10.1080/03623319.2020.1774720>
6. Okafor, C. C., Ajaero, C. C., Madu, C. N., Nzekwe, C. A., Otunomo, F. A., & Nixon, N. N. (2024). Climate change mitigation and adaptation in Nigeria: A review. *Sustainability*, 16(16), Article 7048. <https://doi.org/10.3390/su16167048>

7. Onoh, U. C., Erezi, E., & Clement, B. (2023). Analyzing the role of women in climate resilience building and sustainable farming practices in Nigeria. *IIARD International Journal of Geography and Environmental Management*, 9(4), 65–87.
8. Omilani, N. A., & Bada, A. A. (2024). Identification of Yoruba Indigenous Knowledge Systems relevant for teaching and addressing environmental conservation and climate change. *African Journal of Research in Mathematics, Science and Technology Education*, 28, 389–403. <https://doi.org/10.1080/18117295.2024.2412465>
9. United Nations Department of Economic and Social Affairs. (2025). The Sustainable Development Goals report 2025: Extended report—Goal 15: Life on land. United Nations. https://unstats.un.org/sdgs/report/2025/extended-report/Extended-Report-2025_Goal-15.pdf
10. Wirata, G., Astawa, I. W., Setiawan, B., Judijanto, L., & Siswayanti, N. (2025). Integrating traditional knowledge and local wisdom into public policy for addressing social and ecological crises. *Journal of Hunan University of Arts and Science*, 52(8). <https://doi.org/10.55463/issn.1674-2974.52.8.6>