



Audience Assessment of Broadcast Media Coverage of Environmental and Climate Change Issues in Adamawa State, Nigeria

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Abstract

Broadcast media remains the most accessible channel through which rural and semi-urban populations in northern Nigeria learn about environmental risk, yet little empirical work has examined how television and radio in Adamawa State actually cover environmental and climate change issues, or how that coverage shapes public understanding and behaviour. This study addresses that gap through a survey of 379 residents of Adamawa State, selected using a multi-stage sampling procedure, and complemented by interview material drawn from broadcast journalists in Yola, Mubi, and Numan. The results show that coverage is widely perceived as moderate rather than extensive, concentrated heavily on deforestation and pollution while global warming and renewable energy receive comparatively little airtime. Despite these gaps, broadcast media exerts a measurable influence on public awareness and behaviour, with a majority of respondents reporting that coverage has shaped their environmental practices. Funding shortages, limited airtime, audience disinterest, political interference, and inadequate journalist training emerge as the principal constraints on more comprehensive reporting. The study argues, through the lens of framing and agenda-setting theory, that resourcing and editorial priorities not public indifference are the binding constraints on effective climate communication in the state, and it offers targeted recommendations for broadcasters, policymakers, and media development partners.

Keywords: Broadcast media coverage, Climate change communication, Environmental reporting, Audience perception, Adamawa State

Introduction

Environmental degradation and climate change are no longer distant or abstract threats in northeastern Nigeria; they are measurable pressures on livelihoods, food security, and settlement patterns. Adamawa State, with its mix of savannah, forest, and wetland ecosystems, is especially exposed: deforestation, soil erosion, increasingly erratic rainfall, and rising temperatures are already undermining agriculture and water access across the state (Ayanlade, Radeny, & Morton, 2018). The Food and Agriculture Organization (2020) has identified Adamawa as one of the Nigerian states with the highest rates of forest loss, driven largely by over-farming and reliance on wood fuel. At the national level, Nigeria's vulnerability is compounded by a long coastline, rain-fed agriculture, a large population, and thin institutional and legal capacity for climate response (Asemah & Amah, 2021). Against this backdrop, public understanding of environmental risk and the willingness of communities to adapt depends heavily on the flow of accurate, sustained information, and in a region with comparatively low literacy, that information overwhelmingly

reaches people through radio and television rather than print or digital media (BBC Media Action, 2021).

Two gaps in the existing evidence base motivate this study. First, the bulk of Nigerian media-and-climate research has focused on national or urban outlets, leaving the broadcast landscape of rural, northern states such as Adamawa comparatively understudied (Ojebuyi & Salawu, 2017). Second, where local coverage has been examined, studies tend to document whether environmental issues are covered at all, rather than probing which specific issues dominate airtime, how audiences say that coverage affects their own awareness and behaviour, and what operational constraints funding, airtime, editorial pressure, journalist training actually shape what gets reported. Without this more granular picture, recommendations for improving climate communication in places like Adamawa risk being generic rather than targeted.

This study addresses both gaps directly. It investigates the extent and content of broadcast media coverage of environmental and climate change issues in Adamawa State, examines the influence of that coverage on public awareness and behaviour, and identifies the specific challenges confronting broadcasters in the state. In doing so, it draws on framing theory (Entman, 1993; Scheufele & Tewksbury, 2007) and agenda-setting theory (McCombs & Shaw, 1972) to interpret why certain environmental issues receive more attention than others, and what that pattern of attention means for public engagement with climate adaptation.

Objectives of the Study

The general objective of the study is to examine broadcast media coverage of environmental and climate change issues in Adamawa State, Nigeria. The specific objectives are to:

1. assess the extent of broadcast media coverage of environmental and climate change issues in Adamawa State;
2. identify the specific environmental and climate change issues covered by broadcast media in Adamawa State;
3. examine the influence of broadcast media coverage on public awareness of environmental conservation and climate change adaptation in Adamawa State; and
4. determine the challenges confronting broadcast media in its coverage of environmental and climate change issues in Adamawa State.

Review of Literature

Broadcast Media

Broadcast media (radio and television) differ from print in combining sound and image to create an immersive, emotionally engaging experience, which McQuail (2005) argues makes them a particularly powerful vehicle for shaping opinion on issues such as environmental degradation and climate change. Because television can pair a story with footage of floods, wildfires, or eroded farmland, it can make otherwise abstract environmental threats feel immediate and urgent to viewers. How that footage and narration is assembled matters as much as whether an issue is covered at all: journalists routinely frame environmental stories by foregrounding certain details and omitting others, and that framing shapes how audiences interpret the underlying issue (Entman, 1993, as cited in Agwu & Amu, 2013). Several structural factors constrain this framing, including newsroom priorities, production timelines, and assumptions about what will hold audience attention, and McQuail (2005) cautions that the pursuit of visually compelling content can crowd out more technical scientific detail. Even so, recent scholarship continues to find that broadcast coverage measurably shapes how seriously audiences take climate change (Klein, Beck,

& McHale, 2022; Smith & Joffe, 2021), underscoring why the balance and depth of broadcast coverage not merely its existence is the more consequential question for public understanding.

Climate Change

Climate change denotes long-term shifts in temperature, precipitation, and related atmospheric conditions, arising from both natural variability and human activity (IPCC, 2013). Although the underlying greenhouse mechanism was identified as early as the nineteenth century, scientific consensus that human activity is a primary driver of recent warming solidified only gradually, from early calculations of the warming effect of carbon dioxide through the accumulating evidence of the mid-twentieth century to the IPCC's explicit attribution of most post-1950s warming to anthropogenic causes (IPCC, 2007, 2010). In Nigeria specifically, fossil fuel combustion, deforestation, and gas flaring are the principal anthropogenic contributors, with gas flaring in the Niger Delta alone estimated to account for roughly 30% of the country's total carbon emissions (Chigbo, 2008, as cited in Onyekachi, Solomon, & Ifeanyi, 2012). The consequences are already visible in more frequent extreme weather events the 2012 floods that affected over sixteen Nigerian states are a frequently cited example (Okoro, Odoemelam, & Martin, 2013) and are projected to worsen: the IPCC (2007) estimated that by 2020 between 75 and 250 million people across Africa would face increased water stress as a result of climate change. Responses to this threat fall into two broad categories: mitigation, which targets the sources of greenhouse gas emissions, and adaptation, which adjusts systems and practices to reduce vulnerability to impacts that are already unavoidable (Verheyen, 2002). Media coverage bears on both: it is one of the principal channels through which the public and policymakers learn about mitigation options and adaptation strategies, yet Nigerian media attention to environmental crises has historically lagged behind the scale of the problem, a disparity noted by several scholars (Wilcox, Ewoh, & Okoli, 2012; Okoro & Nnaji, 2012).

Media Coverage

Media coverage refers to the selection, presentation, and framing of news content across outlets, and it is this selective process not simply whether a topic is mentioned that determines how prominent an issue becomes in public consciousness (McQuail, 2005). Two theoretical mechanisms explain how this happens. First, framing, in which journalists organise a story around a particular interpretive lens; Gamson and Modigliani (1987) describe frames as organising ideas that give meaning to otherwise complex or diffuse events, while Tuchman (1978) frames them as production routines that let journalists package information efficiently for their audiences. Second, agenda-setting, whereby repeated coverage of an issue elevates its perceived importance in the public mind, regardless of the specific angle taken (McCombs & Shaw, 1972). For environmental reporting, both mechanisms are consequential: Kleinschmit and Sjostedt (2014) argue that media coverage assigns specific meaning to environmental issues, shaping how audiences discuss and interpret them, while Scheufele and Tewksbury (2007) caution that the same framing choices that make complex science accessible can also introduce confusion if not handled carefully. Applied to a setting like Adamawa State, this suggests that how local broadcasters choose to cover deforestation, flooding, or renewable energy not merely whether they cover it will shape how residents understand the severity of these issues and how urgently they respond to them.

Review of Empirical Studies

Several recent Nigerian studies have investigated how broadcast and other media cover environmental issues, and their findings converge on a common pattern: media attention raises awareness but rarely translates it into sustained, actionable engagement. Adamu (2020) combined surveys and content analysis to assess the influence of radio and television on environmental

awareness in Northern Nigeria and found that broadcast media significantly raised awareness of deforestation and pollution, but left broader climate change issues extreme weather, sea-level rise largely unaddressed, and did not examine whether increased awareness led to behavioural change. Afolabi and Oloyede (2021) used a mixed-methods design combining qualitative interviews with rural communities and quantitative surveys, and found that media campaigns promoted adaptation practices but were not well tailored to specific local conditions, nor did the study track the durability of these effects over time.

Similar gaps appear outside the Adamawa context. Nwosu and Ezeani (2022) analysed television coverage of urban air pollution and found that, while it raised awareness, it rarely connected pollution to its broader health and socio-economic consequences, leaving audiences with a fragmented understanding of the issue. Ogunleye (2023) examined radio's role in promoting renewable energy awareness and found a similar pattern: audiences were informed but not mobilised, in part because programming lacked concrete, community-level guidance on adoption. Ibrahim (2019) identified a more structural problem, finding that Nigerian media coverage of climate change tends toward sensationalism rather than sustained educational content a pattern that can heighten short-term attention while undermining audiences' deeper understanding of the issue.

Coastal and policy-focused studies point to a further set of gaps. Adewale (2021) examined broadcast coverage of environmental hazards in coastal Nigeria and found that, while coverage raised awareness of coastal erosion and flooding, it rarely extended to long-term mitigation strategies or disaster preparedness. Okoro and Eze (2022) found a positive relationship between media coverage and public support for climate policy, but noted that the effect tended to fade quickly, implying that one-off campaigns are less effective than sustained coverage. Suleiman (2020), interviewing Nigerian broadcast practitioners directly, identified funding shortages and political interference as recurring constraints on environmental coverage constraints that closely mirror what the present study's own interviews with Adamawa-based journalists independently surfaced.

Two further studies speak directly to the institutional and continental context. Ayogu, Agwu, and Enwelu (2015), analysing four national newspapers and surveying 150 journalists, found that most journalists sourced climate information from the internet rather than specialised training, and that a lack of training and subject-matter specialisation was a leading constraint on the quality of agriculture-related climate reporting a finding that anticipates this study's own identification of limited journalist expertise as a barrier in Adamawa State. Oyeyinka, Olawole, and Abdulbaqi (2015) evaluated the broader African media landscape and found that, while the frequency of broadcast climate reporting had improved over time, public awareness of the causes, mitigation, and adaptation of climate change remained low, and argued that combining mass media with indigenous communication channels offered a promising path forward. This last point is reinforced by the BBC World Service Trust's (2009) continental study, which found that African citizens are simultaneously the most exposed to climate change and among the least informed about its causes and consequences, placing a particular responsibility on local broadcast journalists to translate scientific findings into accessible public information.

The studies establish that Nigerian and African broadcast media reliably raise awareness of environmental issues but consistently struggle to convert that awareness into sustained behavioural change, comprehensive topic coverage, or durable policy support and that resourcing, training, and political constraints on journalists are recurring explanations for this shortfall. The present study extends this literature by testing these patterns specifically within Adamawa State,

and by pairing quantitative survey evidence with direct interview accounts from the journalists producing the coverage.

Methodology

Study Design

The study adopted a survey research design, which was considered appropriate given the need to gather structured data on media consumption habits, perceptions of coverage, and self-reported behavioural change from a broad cross-section of the Adamawa State population.

Population and Sample

The study population comprised all residents of Adamawa State, estimated at approximately 4,902,100 people (National Bureau of Statistics, 2022). Sample size was determined using the Taro Yamane formula $n = N / [1 + N(e)^2]$, with a 5% margin of error, yielding a minimum sample of 400 respondents; 379 valid responses were retained for analysis.

Sampling Technique

A multi-stage sampling procedure was used. The state was first stratified into its three senatorial districts (Southern, Central, and Northern). One local government area was then selected from each zone by cluster sampling (Mayo Belwa in the Southern zone, Fufere in the Central zone, and Mubi North in the Northern zone). Within each selected local government, the busiest street was purposively chosen, households along that street were randomly selected, and one individual per household was then selected as the respondent.

Instrumentation and Data Collection

Primary data were collected through a structured questionnaire combining closed- and open-ended items, covering respondent demographics, media consumption habits, perceptions of the extent and quality of environmental coverage, self-reported influence on awareness and behaviour, and perceived challenges facing broadcasters. This was supplemented by secondary data drawn from journals, textbooks, and other relevant publications, and by qualitative interview material gathered from broadcast journalists and editors in Yola, Mubi, and Numan, which is used in this article to contextualise the survey findings. Content validity was established through expert review, and internal consistency was assessed using Cronbach's alpha, with a threshold of 0.70 taken to indicate acceptable reliability.

Data Analysis

Data were analysed quantitatively using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics: frequency distributions and simple percentages were used to summarise responses across all research questions.

Findings and Discussion

Table 1. Extent of Broadcast Media Coverage of Environmental and Climate Change Issues in Adamawa State

Rating of Coverage	Frequency	Percentage
Minimal coverage	80	21%
Limited coverage	117	31%
Moderate coverage	152	40%
Substantial coverage	19	5%
Extensive coverage	11	3%
Total	379	100%

Source: Field Survey, 2024.

The data above show that Forty percent of respondents rated coverage as moderate and a further 31% rated it as limited, together accounting for roughly seven in ten respondents. Only 8%

considered coverage substantial or extensive. This pattern is consistent with earlier observations that environmental issues struggle to compete for airtime against more immediate or sensational news (Udoakah & Azuike, 2019) and that economic constraints within media organisations tend to compress coverage of complex, slow-moving issues such as climate change (Ojebode, 2020).

Table 2. Environmental and Climate Change Issues Covered by Broadcast Media in Adamawa State

Issue	Frequency	Percentage
Deforestation	186	49%
Pollution	155	41%
Global warming	27	7%
Renewable energy	8	2%
Other	3	1%
Total	379	100%

Source: Field Survey, 2024.

The result reveals that Deforestation (49%) and pollution (41%) were named far more often than global warming (7%) or renewable energy (2%). This selective emphasis mirrors Boykoff's (2019) observation that environmental coverage tends to privilege immediate, visible problems over more abstract, long-horizon issues, and is consistent with Akinfeleye's (2018) finding that Nigerian media coverage of climate change gravitates toward dramatic, locally visible events rather than sustained tracking of underlying trends.

Table 3. Influence of Broadcast Media Coverage on Public Awareness and Behaviour

Panel A: Perceived Influence on Public Awareness of Environmental Conservation and Climate Change Adaptation

Level of Influence	Frequency	Percentage
Significant	170	45%
Moderate	140	37%
Minimal	57	15%
None	12	3%
Total	379	100%

Panel B: Influence of Broadcast Media on Personal Behaviours Related to Environmental Conservation

Level of Agreement	Frequency	Percentage
Strongly Agree	95	25%
Agree	160	42%
Disagree	85	22%
Strongly Disagree	39	10%
Total	379	100%

Source: Field Survey, 2024.

The findings indicate that broadcast media were perceived to have a significant influence on public awareness, as 45% of respondents rated the influence as significant and 37% as moderate, giving a combined 82%. Similarly, broadcast media were perceived to influence personal environmental conservation behaviours, with 67% of respondents agreeing or strongly agreeing that media coverage influenced their behaviours, compared with 32% who disagreed or strongly disagreed. These findings are consistent with the educational function of media documented in earlier Nigerian research (Aina, 2018) and with agenda-setting theory's prediction

that sustained, focused coverage elevates an issue's perceived importance and, in turn, shapes public attitudes and behaviour (McCombs, 2004; McCombs & Shaw, 1972). The remaining 32–33% of respondents who reported little or no influence nonetheless represent a meaningful segment that current programming is not reaching, pointing to a need for more targeted and engaging formats.

Table 4. Main Challenges Facing Broadcast Media in Covering Environmental and Climate Change Issues

Challenge	Frequency	Percentage
Lack of funding/resources	150	40%
Limited airtime/space	130	34%
Lack of audience interest	70	18%
Political interference	25	7%
Limited journalist expertise	25	7%
Other	15	4%

Source: Field Survey, 2024 (percentages calculated on n = 379; totals exceed 100% due to multiple responses).

The data above reveal that, funding constraints (40%) and limited airtime (34%) were the most frequently cited barriers, and interviews with practitioners in Numan, Yola, and Mubi gave these figures texture. One radio journalist in Numan described how environmental assignments are routinely deprioritised for lack of logistics support, while a television anchor in Yola linked limited airtime directly to ratings pressure, noting that environmental stories are seen as commercially unattractive relative to political news. Audience disinterest (18%) was echoed by a Yola-based TV producer, who observed that environmental stories tend to gain traction only when tied to an acute event such as a flood or famine. Political interference (7%) surfaced in Mubi, where a correspondent described editorial caution around stories that intersect with vested interests, and limited journalist training (7%) was acknowledged by a senior editor in Yola, echoing Hiles and Hinnant's (2014) argument that insufficient training in environmental reporting contributes to superficial or scientifically imprecise coverage. Consistent with these constraints, 42% of respondents felt that coverage quality had been reduced and 36% that coverage quantity had declined as a direct result of these challenges.

Conclusion

Broadcast media plays a demonstrably important role in shaping environmental awareness and behaviour among residents of Adamawa State, with the majority of respondents crediting radio and television coverage with influencing how they think and act on environmental issues. At the same time, that coverage is neither as extensive nor as balanced as it could be: it is concentrated on deforestation and pollution, while global warming and renewable energy remain comparatively invisible on air. This imbalance is best explained not by audience indifference but by a cluster of resourcing and institutional constraints inadequate funding, limited airtime, weak journalist training, and occasional political sensitivity that together compress what broadcasters are able to cover and how deeply they can cover it. Addressing these constraints is the clearest path toward a more comprehensive and effective broadcast media contribution to environmental conservation and climate change adaptation in the state.

Recommendations

Based on the findings, the study recommends that:

5. Broadcast stations in Adamawa State should work toward more balanced coverage of environmental and climate change issues, deliberately expanding attention to global

warming, renewable energy, and other underrepresented topics alongside the currently dominant themes of deforestation and pollution.

6. Media organisations, with support from development partners and government, should invest in dedicated funding streams, expanded airtime allocations, and structured training for journalists in environmental and climate reporting, to address the resourcing constraints identified as the leading barriers to comprehensive coverage.
7. Broadcasters should pursue formal partnerships with environmental experts and local NGOs to improve the accuracy, credibility, and local relevance of reporting, and to ease the burden on individual journalists who currently lack specialised training.
8. To address audience disengagement, stations should experiment with interactive formats, community-based environmental campaigns, and cross-promotion on social media platforms, so that environmental content is not confined to periods immediately following an acute event such as a flood.
9. Future research should extend this line of inquiry to digital and social media platforms, examine how coverage effects vary across demographic groups, and evaluate the effectiveness of specific media campaigns through case-study analysis.

References

- Adamu, E. E. (2020). *Media, environment, and climate change communication in Nigeria*. Jos University Press.
- Adewale, O. A. (2021). Media coverage of environmental sustainability and climate change in Nigeria: Challenges and prospects. *Journal of Communication and Media Research*, 13(2), 45–58.
- Afolabi, O. P., & Oloyede, B. (2021). Media representation of environmental risks and social development in South-West Nigeria. *Sapientia Foundation Journal of Education, Sciences and Gender Studies*, 3(4), 181–195.
- Aina, A. O. (2018). Media, environment, and development communication in Africa. *Journal of Development Communication*, 29(1), 33–47.
- Akinfeleye, R. A. (2018). *Fourth estate of the realm or fourth estate of the wreck? Imperatives of social responsibility in journalism*. University of Lagos Press.
- Amu, C. J., & Agwu, A. E. (2013). Frame analysis of newspaper coverage of climate change issues in Nigeria. *Journal of Agricultural Extension*, 17(2), 121–134.
- Asemah, E. S., & Amah, F. O. (2021). Media framing and setting agenda for under-reported environmental issues in Nigeria. *Jos Journal of Media Studies*, 12(1), 15–30.
- Ayanlade, A., Radeny, M., & Morton, J. F. (2018). Agricultural stakeholders' perceptions of climate change and biophysical sensitivities in central Nigeria. *Climatic Change*, 147(1 2), 269–283. <https://doi.org/10.1007/s10584-017-2138-0>
- Ayogu, C. J., Agwu, A. E., & Enwelu, I. A. (2015). Mass media coverage of climate change issues in South-Eastern Nigeria. *Journal of Agricultural Extension*, 19(1), 60–73.

- BBC Media Action. (2021). *Communicating climate change in Nigeria: Audiences, attitudes, and engagement*. BBC Media Action Research Report.
- BBC World Service Trust. (2009). *The African climate change research project: Final report Nigeria*. BBC World Service Trust.
- Boykoff, M. T. (2019). *Creative (climate) communications: Productive pathways for science, policy and society*. Cambridge University Press. <https://doi.org/10.1017/9781108164047>
- Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43(4), 51–58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
- Food and Agriculture Organization. (2020). *The state of food security and nutrition in the world 2020: Transforming food systems for affordable healthy diets*. Food and Agriculture Organization of the United Nations. <https://doi.org/10.4060/ca9692en>
- Gamson, W. A., & Modigliani, A. (1987). The changing culture of affirmative action. In R. D. Braungart (Ed.), *Research in political sociology* (Vol. 3, pp. 137–177). JAI Press.
- Hiles, S. S., & Hinnant, A. (2014). Climate change in the daily newspaper: The environmental beat in state capital press corps. *Science Communication*, 36(3), 324–346. <https://doi.org/10.1177/1075547013518842>
- Ibrahim, M. A. (2019). Development communication and environmental reporting in the Nigerian print media. *Ilorin Journal of Communication*, 5(1), 88–102.
- Intergovernmental Panel on Climate Change. (2007). *Climate change 2007: Synthesis report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (R. K. Pachauri & A. Reisinger, Eds.). IPCC.
- Intergovernmental Panel on Climate Change. (2010). *Guidance note for lead authors of the IPCC Fifth Assessment Report on consistent treatment of uncertainties*.
- IPCC. Intergovernmental Panel on Climate Change. (2013). *Climate change 2013: The physical science basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (T. F. Stocker et al., Eds.). Cambridge University Press.
- Klein, K. E., Beck, J., & McHale, J. P. (2022). Environmental framing and public risk perception: A contemporary review. *Environmental Communication*, 16(4), 481–497.
- Kleinschmit, D., & Sjöstedt, V. (2014). Media coverage of climate change and forest sector governance. *Forest Policy and Economics*, 48(1), 12–20. <https://doi.org/10.1016/j.forpol.2014.05.006>

- McCombs, M. (2004). *Setting the agenda: The mass media and public opinion*. Polity Press.
- McCombs, M. E., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly*, 36(2), 176–187. <https://doi.org/10.1086/267990>
- McQuail, D. (2005). *McQuail's mass communication theory* (5th ed.). SAGE Publications.
- National Bureau of Statistics. (2022). *Nigeria demographic and environmental statistics report*. National Bureau of Statistics.
- Nwosu, C. A., & Ezeani, C. N. (2022). Information dissemination strategies for climate change awareness in Southern Nigeria. *Library Philosophy and Practice (e-journal)*, Article 7102.
- Ogunleye, A. O. (2023). Media framing of climate change risks in sub-Saharan Africa: Empirical evidence from Nigeria. *African Journal of Media and Communication*, 8(1), 112–128.
- Ojebode, A. (2020). *Communication for development and social change in Africa*. Ibadan University Press.
- Ojebuyi, B. R., & Salawu, A. (2017). Coverage of environmental issues in indigenous language newspapers in South-West Nigeria. *Journal of Asian and African Studies*, 52(7), 960–975. <https://doi.org/10.1177/0021909616636033>
- Okoro, N., & Eze, C. (2022). Media agenda setting and public awareness of environmental hazards in Nigeria. *International Journal of Communication Research*, 14(2), 89–104.
- Okoro, N., & Nnaji, C. I. (2012). Press coverage of environmental issues in Nigeria: A content analysis of selected national dailies. *Journal of Media and Aesthetics*, 8(1), 45–62.
- Okoro, N., Odoemelam, C. C., & Martin, O. (2013). Climate change, development and mass media in Nigeria: Issues, challenges and options. *Developing Country Studies*, 3(13), 116–125.
- Onyekachi, E., Solomon, O., & Ifeanyi, C. (2012). Socio-economic impacts of climate change on rural farming communities in South-Eastern Nigeria. *Journal of Agricultural and Environmental Sciences*, 4(2), 201–215.
- Oyeyinka, R. A., Olawole, A. O., & Abdulbaqi, S. S. (2015). Mass media channels as sources of climate change information among arable crop farmers in Kwara State, Nigeria. *Journal of Agricultural & Food Information*, 16(3), 254–266. <https://doi.org/10.1080/10496505.2015.1052601>
- Scheufele, D. A., & Tewksbury, D. (2007). Framing, agenda setting, and priming: The evolution of three media effects models. *Journal of Communication*, 57(1), 9–20. <https://doi.org/10.1111/j.1460-2466.2006.00326.x>

- Smith, N., & Joffe, H. (2021). Visual representations of climate change in print media: A comparative analysis. *Global Environmental Change*, 68, Article 102263. <https://doi.org/10.1016/j.gloenvcha.2021.102263>
- Suleiman, Q. (2020). Environmental reporting and national development in the Nigerian print media. *Journal of Humanities and Social Sciences*, 11(3), 77–91.
- Tuchman, G. (1978). *Making news: A study in the construction of reality*. The Free Press.
- Udoakah, N., & Azuike, C. (2019). Print media coverage of environmental degradation in the Niger Delta region. *Journal of African Media Studies*, 11(2), 203–219. https://doi.org/10.1386/jams.11.2.203_1
- Verheyen, R. (2002). *Adaptation to the impacts of climate change under the UNFCCC: The legal framework*. Environmental Law Institute.
- Wilcox, I. A., Ewoh, A. I., & Okoli, F. C. (2012). The politics of climate change and environmental governance in Nigeria. *African Journal of Political Science and International Relations*, 6(5), 105–116.