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Transforming Ocean Waste into Art and Music: A Multisensory Approach to Environmental Advocacy and Blue Economy Awareness

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Abstract

Marine pollution poses escalating threats to marine biodiversity, ecosystem stability, and coastal livelihoods, and there is growing interest in creative, multisensory strategies that can complement scientific and policy responses by fostering emotional connection and community participation. This study explored how ocean waste can be transformed into visual art and combined with music-based advocacy to support marine conservation and blue economy awareness in coastal communities of Lagos State, Nigeria. Using a qualitative Participatory Action Research design, the project engaged community members, artists, volunteers, and environmental stakeholders in beach clean-ups, waste collection, participatory art workshops, musical performances, and environmental education activities at three coastal sites between February and April 2026. Data were generated through participant observation, semi-structured interviews, informal discussions, field notes, and workshop documentation, and were analysed thematically using a coding frame derived from Social Practice Theory. The findings suggest that transforming locally collected marine debris into public artworks was associated with heightened environmental awareness among participants by providing tangible, place-based encounters with marine pollution, while music appeared to strengthen emotional engagement and facilitate culturally resonant communication. Participants also increasingly connected environmental protection with livelihoods, tourism, and community wellbeing, consistent with emerging blue economy understandings. These findings should be interpreted with caution: the study was short in duration, relied on qualitative observation and self-reported perceptions within selected communities, and was not designed to measure sustained behavioural change or support causal inference. Within these limits, the study suggests that participatory, arts-based approaches may complement conventional environmental communication in developing coastal contexts, and it identifies longitudinal evaluation as a priority for future research.

Introduction

Marine pollution has emerged as one of the most pressing environmental challenges of the twenty-first century, threatening marine biodiversity, ecosystem services, coastal livelihoods, and sustainable economic development (Jambeck et al. 2015; Geyer et al. 2017). The rapid increase in plastic production and the improper disposal of waste materials have resulted in unprecedented levels of debris entering oceans and coastal environments worldwide, with millions of metric tons of plastic waste estimated to enter the oceans annually (Jambeck et al. 2015). Marine debris negatively affects aquatic organisms through entanglement, ingestion, habitat degradation, and the disruption of ecological processes, while also posing risks to human health and to coastal economies dependent on fisheries and tourism (UNEP 2021). These concerns have intensified global efforts toward ocean conservation and sustainable resource management, particularly within the framework of the blue economy, which emphasises the sustainable use of ocean resources for economic growth, environmental health, and societal wellbeing (World Bank 2017; Lee et al. 2020).

The increasing prevalence of marine waste has generated significant scholarly and policy attention, with researchers exploring strategies for prevention, mitigation, recycling, and public awareness (Geyer et al. 2017; Dauvergne 2018; UNEP 2021). These efforts highlight the need for integrated approaches that combine improved waste management systems, policy frameworks, and community engagement to reduce plastic leakage into oceans. While technological innovations and policy interventions remain critical components of marine conservation, scholarship has increasingly recognised that environmental challenges are not solely technical problems but also social and behavioural issues requiring public engagement and collective action (Bennett et al. 2017). Environmental awareness therefore plays a central role in fostering responsible attitudes and behaviours toward marine ecosystems, and effective communication strategies are essential for translating scientific knowledge into meaningful public understanding and action (Moser 2016). Consequently, environmental advocacy has expanded beyond traditional educational campaigns to incorporate creative and participatory approaches capable of engaging diverse audiences and stimulating emotional connections with environmental issues (Curtis et al. 2014).

Among these approaches, art has gained recognition as a powerful medium for environmental communication and advocacy. Environmental art uses creative expression to interpret ecological issues, stimulate reflection, and encourage behavioural change. Unlike conventional scientific communication, artistic practices engage audiences emotionally and aesthetically, enabling complex environmental challenges to be communicated in accessible and memorable ways (Inwood 2008; Miles 2014). Through visual representation, symbolism, and storytelling, artists can communicate environmental messages that resonate across cultural, educational, and social boundaries (Gabrys and Yusoff 2012). Artists worldwide have increasingly utilised discarded materials, including marine waste, as artistic media to highlight the consequences of pollution and to interrogate the cultural meanings of waste itself (Bishop 2012; Hawkins 2006).

By converting waste into meaningful artistic creations, environmental artists demonstrate the potential for reimagining discarded materials while simultaneously drawing attention to environmental degradation. The use of recycled and reclaimed materials in artistic production has become increasingly significant within contemporary sustainability discourse, reflecting broader commitments to circular-economy thinking, in which reuse, material recirculation, and waste minimisation are central strategies (Kirchherr et al. 2017). According to Sung (2015), creative reuse, or upcycling, contributes not only to environmental sustainability but also to public education by encouraging alternative perceptions of waste and consumption. When marine debris is transformed into artworks, it acquires symbolic significance beyond its original function as waste: the resulting objects serve as visual narratives that communicate the urgency of addressing marine pollution while fostering environmental consciousness among viewers.

Beyond visual art, music has also emerged as an influential medium for environmental communication and social mobilisation. Music possesses a distinctive capacity to evoke emotions, shape collective identities, and communicate messages across linguistic and cultural barriers (Pedelty 2012; Allen and

Dawe 2016). Environmental themes expressed through music can make ecological issues more relatable and emotionally engaging, and musicians themselves have described music as a vehicle for environmental education and advocacy (Publicover et al. 2018). Songs, performances, and musical events often create shared experiences that can strengthen community participation and environmental stewardship (Pedelty 2012). Consequently, environmental advocates increasingly employ music as a strategic tool for raising awareness about climate change, biodiversity conservation, waste management, and other sustainability concerns.

The integration of art and music within environmental advocacy reflects a broader shift toward multisensory approaches to communication and education. Multisensory learning involves engaging multiple senses simultaneously to enhance understanding, retention, and emotional connection, and research indicates that multisensory experiences can facilitate deeper learning than single-mode communication (Shams and Seitz 2008). In environmental contexts, multisensory approaches enable individuals to encounter ecological issues through visual, auditory, emotional, and participatory dimensions, potentially making environmental messages more memorable and personally relevant.

Existing literature points to the promise of arts-based approaches in environmental education and advocacy. Curtis et al. (2014) found that creative arts initiatives can foster environmental engagement by encouraging reflection, dialogue, and emotional investment in sustainability issues, and Galafassi et al. (2018) document a rapidly growing body of artistic practice engaging with climate and environmental change. Jacobson et al. (2015) similarly argue that environmental communication strategies are more successful when they incorporate culturally relevant and emotionally resonant forms of expression. Artistic interventions often reach audiences who may be less responsive to scientific reports or policy discussions, thereby broadening public participation in environmental discourse, and participatory art projects can strengthen community ownership of environmental initiatives by creating opportunities for collaboration, creativity, and collective action (Inwood 2008).

Within marine conservation contexts, creative practices have been employed to communicate the impacts of ocean pollution. Visual installations constructed from marine debris have been exhibited in museums, public spaces, and community settings to illustrate the scale and consequences of ocean waste, and survey research suggests that public concern about marine litter is widespread and responsive to communication interventions (Hartley et al. 2018). However, while the visual dimensions of environmental art have received considerable scholarly attention, fewer studies have examined how visual art can be integrated with music and other sensory experiences to create more comprehensive environmental advocacy initiatives.

This limitation highlights a gap within existing research. Although scholars acknowledge the individual contributions of art and music to environmental communication, relatively little attention has been devoted to their combined role as a multisensory advocacy strategy, particularly within the context of marine conservation and blue economy awareness. Most studies focus on either visual artistic interventions or musical engagement independently, leaving insufficient exploration of how these forms

can complement one another. Moreover, limited research has documented community-based initiatives that transform ocean waste into artistic works while simultaneously employing music as an educational and advocacy tool. This gap is particularly evident in developing coastal communities, where marine pollution presents significant environmental and socioeconomic challenges and where contextually appropriate approaches to public engagement are urgently needed.

The present study addresses this gap by examining how ocean waste can be transformed into artistic expressions that serve as symbols of environmental responsibility, while utilising music to amplify conservation messages and promote public awareness. The significance of the study extends to broader discussions surrounding the blue economy, a concept that emphasises the sustainable use of ocean resources while ensuring environmental protection, social inclusion, and economic development (World Bank 2017; Voyer et al. 2018). Achieving these objectives requires not only technological and policy innovations but also cultural and behavioural changes that encourage responsible interactions with marine ecosystems. Public awareness and community participation are therefore fundamental components of blue economy implementation (Lee et al. 2020; Bennett et al. 2021). By employing art and music as advocacy tools, this study contributes to efforts aimed at cultivating environmental stewardship and strengthening public engagement with marine conservation initiatives.

Furthermore, the study responds to growing calls for interdisciplinary approaches to sustainability challenges. Environmental issues are inherently complex and interconnected, requiring collaboration across scientific, social, cultural, and creative domains. The integration of artistic and musical practices into environmental advocacy demonstrates how creative disciplines can complement scientific and policy-based interventions. Such approaches recognise that effective environmental communication involves not only informing audiences but also inspiring them to care, reflect, and act. Accordingly, this study explores how creative expression, community participation, and direct ecological action can be combined within a single advocacy framework, and it examines the possibilities and limits of this approach in a West African coastal context.

Theoretical framework: Social Practice Theory

This study adopts Social Practice Theory (SPT) as developed by Shove, Pantzar, and Watson (2012). SPT argues that human behaviour is not merely the result of individual attitudes or knowledge but is shaped by the interaction of materials, meanings, and competencies that constitute everyday social practices. According to the theory, durable behavioural change occurs when these elements are transformed together, leading individuals and communities to adopt new ways of thinking and acting (Shove et al. 2012). SPT is relevant to this study because the project sought not only to create awareness about marine pollution but also to engage environmental behaviour through direct community participation, artistic production, and music-based advocacy. The project transformed marine waste materials collected from beaches into artistic installations, thereby inviting community members to reinterpret waste: instead of viewing ocean debris as useless refuse, participants and audiences were encouraged to see it as a resource capable of conveying environmental messages. This transformation aligns with

the material dimension of SPT, which emphasises the role of physical objects and infrastructures in shaping social behaviour (Shove et al. 2012).

The theory also emphasises meanings, the social and cultural significance attached to practices. In this study, music, art, and environmental advocacy were used to reframe societal understandings of marine waste and ocean conservation. Through environmental songs, community dialogues, clean-up campaigns, and public art activities, participants engaged with new meanings associated with responsible waste disposal, marine conservation, and the blue economy. The artistic installations created from ocean debris functioned as symbolic representations of environmental responsibility, while musical performances communicated conservation messages in culturally accessible ways. Environmental protection was thereby framed not merely as an ecological necessity but as a shared social responsibility and community value.

Furthermore, SPT highlights competencies: the knowledge, skills, and capabilities required to perform particular practices. Throughout the project, community members were offered opportunities to acquire practical competencies through participation in beach clean-up exercises, environmental education sessions, artistic workshops, and blue economy awareness campaigns, including waste sorting and management practices, knowledge about marine conservation, and skills for transforming discarded materials into artistic expressions.

The suitability of SPT for environmental sustainability studies has been increasingly recognised. Researchers have argued that environmental challenges such as pollution, waste management, and climate change cannot be adequately addressed through awareness campaigns alone, because behaviour is embedded within broader social practices and cultural systems (Welch and Warde 2017). Likewise, Spurling and McMeekin (2015) contend that sustainability interventions are more effective when they seek to reshape the social practices that underpin environmentally harmful behaviours. Sahakian and Wilhite (2014) demonstrate that sustainable consumption and environmental stewardship are better understood through the lens of social practices than through individual decision-making alone, and transitions scholarship similarly argues that movement toward sustainability involves changes in cultural meanings, social norms, infrastructures, and daily practices (Geels et al. 2017). In the context of this study, the integration of art, music, environmental education, and community participation represents a deliberate effort to engage existing waste-disposal practices and to encourage more sustainable relationships with coastal ecosystems.

To guide the analytical process, the study developed a coding frame derived from the core elements of SPT as articulated by Shove et al. (2012). This coding frame structured the organisation of themes and informed the interpretation of participants' responses. The full coding frame is presented in Table 1 (see Appendix).

SPT therefore provides a theoretical lens for understanding how the combination of art, music, and community participation may foster environmental awareness and support behavioural change. Through the interaction of materials (ocean waste, waste bins, and artworks), meanings (environmental advocacy

and conservation messages), and competencies (knowledge and skills acquired through participation), the study examines how creative interventions can encourage engagement with marine conservation and blue economy awareness. It should be emphasised that the study documents the initiation of such practice-level engagements rather than their long-term consolidation, which falls outside the study's timeframe.

Methodology

Research design

This study employed a qualitative research design within the framework of Participatory Action Research (PAR) to investigate how ocean waste can be transformed into artistic expressions and musical advocacy tools for promoting marine conservation and blue economy awareness in Lagos State, Nigeria. The study was funded by the Tertiary Education Trust Fund (TETFund)/National Research Fund (NRF) 2025 Research Grant, which supported environmental restoration activities, community engagement programmes, artistic production, and public awareness campaigns. The qualitative approach enabled the researchers to gain an in-depth understanding of participants' experiences, perceptions, attitudes, and responses to the use of art and music as environmental advocacy tools, while documenting the social and environmental activities undertaken during the intervention.

PAR was considered appropriate because the study emphasised collaboration between researchers, local communities, environmental stakeholders, artists, volunteers, and members of the public (Reed 2008). Rather than treating community members merely as research participants, the study involved them directly in environmental restoration, artistic production, environmental education, and advocacy activities. This approach facilitated both knowledge generation and practical intervention, and it enabled stakeholders to contribute to problem identification, solution development, and environmental action. A consequence of this design, addressed further in the limitations section, is that data collection and intervention were co-occurring rather than sequential, and the researchers were participants in, rather than detached observers of, the activities they documented.

Study area and preliminary engagement

The study was conducted in selected coastal and waterfront communities in Lagos State, Nigeria: Wave Beach (Elegushi, Lekki), Point of No Return Beach (Gberefun Island, Badagry), and Ilaje Waterfront (Bariga). Field activities took place between February and April 2026, comprising a site visit and beach clean-up at Wave Beach (20 February 2026); a royal courtesy visit, beach clean-up, and community engagement at Gberefun Island, Badagry (26 February 2026); and a waterfront clean-up and community sensitisation at Ilaje Waterfront, Bariga (4 April 2026). Lagos State was selected because of its extensive coastline, growing population, increasing environmental pressures, and strategic importance within Nigeria's emerging blue economy framework. The state experiences significant challenges associated

with marine pollution, particularly plastic waste accumulation along beaches and waterways, making it a suitable setting for examining creative approaches to environmental advocacy.

Prior to commencing field activities, the research team formally engaged relevant stakeholders through written correspondence and consultations. Official letters introducing the project and outlining its objectives were sent to beach management authorities, community leaders, and other stakeholders, seeking permission to conduct environmental advocacy programmes, clean-up exercises, waste collection activities, and artistic interventions within their jurisdictions. This preliminary engagement also established partnerships with community leaders, environmental groups, and local residents whose participation proved essential to project implementation.

Community sensitisation activities constituted the first stage of field implementation. These engagements introduced residents to the objectives of the study and emphasised the importance of marine conservation, sustainable waste management, and blue economy development. Stakeholders were informed about the environmental and socioeconomic consequences of marine pollution and were invited to participate in subsequent project activities. The sensitisation programmes also served as an avenue for understanding local perceptions of environmental challenges and for building trust before the commencement of project interventions.

Environmental awareness campaigns and musical advocacy

A major component of the study was the integration of music as an environmental communication and advocacy strategy. Before the commencement of beach clean-up operations, the research team organised environmental awareness campaigns across the selected coastal communities. During these outreach programmes, music was employed as a culturally relevant medium for communicating environmental messages to diverse audiences. Environmental songs and musical performances were developed and presented to educate community members about the dangers of indiscriminate waste disposal into oceans and waterways. The musical interventions highlighted the ecological consequences of marine pollution, the importance of protecting marine biodiversity, and the need for responsible environmental stewardship. The performances also served as platforms for communicating blue economy principles, emphasising how healthy marine ecosystems contribute to sustainable livelihoods, fisheries, tourism, and economic development. Observations of how audiences responded to these musical components are reported in the Results section.

Coastal clean-up and marine waste collection

Following the awareness campaigns, coastal clean-up operations were conducted across the study locations. These activities involved researchers, community volunteers, environmental advocates, local residents, artists, and other stakeholders working collaboratively to remove waste materials from

beaches and shoreline environments. Consistent with PAR principles, the researchers participated actively in the clean-up exercises rather than merely observing.

Using rakes, shovels, brooms, waste bags, and other cleaning tools, the research team joined volunteers in sweeping beaches and removing accumulated debris from the shoreline. Particular attention was paid to waste deposits situated along tidal zones, where currents could transport debris back into the water during high tides. A wide range of waste materials was recovered, including plastic bottles, nylon materials, food packaging, fishing-related waste, metal fragments, glass containers, and miscellaneous marine debris. The collected materials were sorted and transported to designated workspaces, where they were prepared for artistic transformation. The clean-up activities also served as practical demonstrations of environmental responsibility, giving community members direct experience of the scale of marine pollution affecting their local environments.

Transformation of marine waste into art

Following the waste collection phase, the recovered materials were sorted, cleaned, and categorised according to their suitability for artistic production. Reusable materials were retained for incorporation into artistic installations, while hazardous and non-recyclable materials were disposed of using environmentally appropriate waste management procedures.

The study subsequently organised participatory art workshops involving professional artists, environmental advocates, youth volunteers, community members, and researchers. During these workshops, participants were introduced to creative upcycling techniques and guided through the process of transforming marine waste into artistic expressions. The workshops encouraged collaboration, creativity, and knowledge exchange while fostering environmental awareness through artistic practice. The artworks were designed to communicate themes of marine conservation, biodiversity protection, environmental responsibility, sustainable waste management, and ocean stewardship. Selected artworks were installed for permanent display at participating beach sites, where they are intended to serve as enduring symbols of environmental responsibility and reminders of the consequences of marine pollution beyond the duration of the research project. The longer-term reception and influence of these installations were not assessed within the study period.

Community support and environmental infrastructure

As part of its commitment to leaving a practical footprint in participating communities, the project extended beyond awareness creation and artistic production to provide environmental infrastructure. Waste bins (100-litre receptacles) were donated to the participating beaches and waterfront communities to support proper waste disposal practices. The donation of waste bins formed an integral component of the intervention strategy by addressing one of the contributing factors to indiscriminate waste disposal in coastal areas: the absence of accessible disposal facilities. Whether the bins produce

sustained changes in disposal behaviour was not measured and remains a question for follow-up research.

Data collection procedures

Data were collected throughout the project using multiple qualitative methods: participant observation, semi-structured interviews, informal discussions, field notes, workshop documentation, photographic records, reflective journals, and participant feedback. No formal survey questionnaires or structured interview schedules were administered; interview guides remained deliberately flexible, consistent with the PAR design's emphasis on responding to emergent community dynamics rather than following a fixed data collection script.

Participant observation played a central role because researchers were directly involved in the awareness campaigns, clean-up exercises, artistic workshops, musical performances, and community interactions. This immersion enabled the researchers to observe behaviours, interactions, levels of participation, and community responses in their natural settings while documenting emerging issues throughout the intervention.

Semi-structured interviews were conducted with artists, community leaders, environmental advocates, volunteers, beach management personnel, and residents. These interviews explored participants' perceptions of marine pollution, environmental advocacy, artistic interventions, community engagement, conservation practices, and the effectiveness of music as a communication tool. Informal discussions conducted during project activities provided additional insights into participant attitudes and reactions. Field notes and reflective journals were maintained throughout the study to document observations, emerging themes, participant interactions, and researchers' reflections on the intervention process. Workshop records and photographic documentation further contributed to understanding how participants engaged with the artistic and environmental activities. Consolidated field reports for each site visit, which constitute the primary documentary record of the study, are provided as supplementary material.

Data analysis

All data generated during the study were qualitative and were analysed using thematic analysis (Braun and Clarke 2006). The analysis involved the systematic organisation, coding, categorisation, and interpretation of data obtained from interviews, participant observations, field notes, workshop records, reflective journals, photographic documentation, and participant feedback. Coding proceeded deductively using a frame derived from the three dimensions of Social Practice Theory (materials, meanings, and competencies), supplemented by open coding of content that captured meaningful observations or participant perspectives. Codes were grouped into broader thematic categories reflecting participants' experiences, and interpretive decisions were documented in analytical memos. No qualitative data analysis software was used; the analysis was conducted manually by the research

team, with collective discussion of interpretive decisions and researcher triangulation used to enhance the credibility of findings. The full coding frame is presented in Table 1 (see Appendix).

Ethical considerations

Ethical approval

for the research was obtained from the Yaba College of Technology Research Ethics Committee. Approval to conduct activities within participating beach environments was also secured through formal engagement with relevant authorities, beach management organisations, and community stakeholders. Participants were informed about the objectives and procedures of the study and were assured that their participation was entirely voluntary. Informed consent was obtained before the exercise of beach cleaning and other forms of data collection, and participants were informed of their right to withdraw from the study at any stage without penalty. Confidentiality and anonymity were maintained throughout data collection, analysis, and reporting, and all information obtained was used solely for research purposes.

Results

The findings reported below are based on qualitative data observations, interviews, informal discussions, and documentary records collected during project implementation. They describe participants' perceptions and engagement during and immediately after the intervention; they do not measure changes in behaviour over time.

Community engagement and environmental advocacy activities

Stakeholder engagement played an important role in facilitating the implementation of the project across the selected coastal communities. Interactions with traditional rulers, community leaders, residents, environmental stakeholders, and volunteers revealed a generally positive disposition towards the project's objectives. Discussions with community representatives suggested that participants perceived the initiative as addressing both environmental concerns and broader community interests, including environmental cleanliness, public awareness, cultural representation, and community visibility. A recurring theme in engagements with community leaders was the desire for greater recognition of the environmental, cultural, and historical significance of coastal communities. In several locations, stakeholders expressed the view that environmental interventions should not only address pollution but should also contribute to preserving local identity and promoting public appreciation of coastal heritage. These perspectives became particularly evident during discussions surrounding the installation of artworks, which many participants regarded as opportunities to create lasting symbols of environmental consciousness within their communities.

The environmental awareness campaigns provided insight into existing levels of knowledge regarding marine pollution and waste disposal practices. While many participants demonstrated awareness of the presence of waste along beaches and waterfronts, discussions revealed varying levels of understanding of the ecological implications of marine debris. Community sensitisation sessions therefore created opportunities for conversations around the effects of pollution on marine ecosystems, fisheries, tourism, and community wellbeing. Participants frequently associated cleaner coastal environments with improved living conditions and enhanced economic opportunities.

Music-based environmental advocacy

One notable observation was the role of music in facilitating community participation during environmental awareness activities. Musical performances attracted the attention of residents and created informal spaces for interaction between the research team and community members. Observational records indicated that participants often engaged more actively during sessions that combined environmental messages with music than during conventional awareness discussions. Interviews conducted after outreach activities suggested that music helped simplify and communicate environmental messages in ways that participants found relatable and memorable. Rather than functioning solely as entertainment, the musical component appeared to create opportunities for dialogue on issues such as waste disposal, marine conservation, and environmental responsibility. This observation suggests that culturally familiar forms of communication may provide useful entry points for environmental education within coastal communities, although the present design does not permit a formal comparison of music-based and conventional formats.

Beach clean-up activities

The beach clean-up exercises revealed the persistent presence of waste materials across the study locations. Researchers and volunteers encountered a range of debris, including plastic bottles, nylon materials, packaging waste, ropes, fishing-related materials, and other discarded items deposited along shorelines and waterfronts. A pattern observed during the clean-up exercises was the concentration of waste materials within tidal zones and shoreline areas. Participants frequently noted that some of the accumulated debris appeared to have been transported by water currents, while other materials were linked to local disposal practices. These observations point to the interconnected nature of marine pollution, whereby waste generated in one location may eventually affect distant coastal environments.

Participation in the clean-up exercises appeared to influence how community members viewed the issue of marine pollution. Conversations held during and after the exercises suggested that direct involvement in waste collection provided participants with a more immediate understanding of the quantity and types of waste present within their environments. Several participants remarked that the clean-up activities highlighted the need for more consistent waste management practices and community-based environmental initiatives.

Artistic transformation of marine waste

The process of transforming collected marine debris into artworks generated considerable interest among participants and community members. Observations from the workshops indicated that many participants initially viewed the collected materials primarily as waste. As the artistic process progressed, however, discussions increasingly focused on the potential of these materials to communicate environmental messages and provoke reflection on human interactions with marine environments. The workshops indicated that artistic production provided a platform for participants to engage with environmental issues in ways that differed from conventional educational approaches. Through collaborative design and construction processes, participants explored themes relating to marine biodiversity, pollution, conservation, and sustainability. The resulting artworks incorporated materials recovered directly from coastal environments, creating visual connections between the environmental challenges being addressed and the artistic responses developed through the project. Interviews with participants suggested that the use of locally collected materials contributed to the perceived relevance of the artworks: many indicated that the installations reflected realities visible within their own communities and therefore possessed a level of authenticity that strengthened their environmental messages.

Community ownership and environmental responsibility

A consistent theme emerging from observations, interviews, and community discussions was the importance of participation in fostering a sense of ownership over environmental initiatives. Community members who participated in awareness campaigns, clean-up exercises, or artistic activities frequently expressed a stronger interest in discussions about environmental management than individuals who engaged only as observers. The donation of waste bins to participating beach communities was received positively by local stakeholders. Community leaders and residents viewed the bins as practical resources that could support efforts to reduce indiscriminate waste disposal, and discussions with participants suggested that environmental awareness programmes were often perceived as more meaningful when accompanied by visible and tangible interventions. Similarly, the installation of artworks at participating beaches generated considerable interest among community stakeholders. Many participants expressed the view that the artworks could serve as visual reminders of the environmental messages promoted during the project, and some suggested that the installations could contribute to community identity by creating landmarks associated with environmental stewardship and conservation.

Emerging patterns and relationships

Several tentative patterns emerged from the data. First, there appeared to be a relationship between participation and expressed environmental awareness: individuals who engaged directly in project activities often demonstrated a greater willingness to discuss environmental issues and potential solutions than those who participated only indirectly. Because participation was voluntary, this pattern may partly reflect pre-existing interest rather than an effect of participation itself. Second, the findings suggest a relationship between creative engagement and environmental communication: the integration of music, visual art, and environmental advocacy appeared to create multiple pathways through which

participants could engage with conservation messages, encountering environmental issues through visual, auditory, and experiential forms of learning rather than verbal instruction alone. Third, the data revealed a connection between environmental concerns and community development aspirations: participants frequently discussed environmental protection alongside tourism, community reputation, cultural preservation, and economic opportunities, suggesting that environmental sustainability is often understood within broader community contexts rather than as an isolated ecological issue.

Summary of findings

Overall, the findings suggest that the combination of environmental clean-up activities, music-based advocacy, community participation, and artistic production created opportunities for dialogue and reflection on marine pollution and conservation within the selected coastal communities. The study documented community concerns regarding waste accumulation along beaches, identified interest in environmental stewardship, and highlighted the potential of creative approaches to support public engagement with environmental issues. The transformation of marine waste into artistic installations, together with the use of music as an advocacy tool, provided alternative ways of communicating conservation messages, and the donation of waste bins and installation of artworks were viewed by participants as practical contributions capable of supporting ongoing environmental awareness efforts. These findings describe perceptions and engagement during the project period; whether they translate into sustained behavioural or community-level change remains to be established.

Discussion

Addressing the research question

This study examined how ocean waste could be transformed into artistic installations and how music could be employed as a tool for environmental advocacy to promote marine conservation and blue economy awareness in coastal communities in Lagos State, Nigeria. The findings indicate that the integration of environmental clean-up activities, artistic production, musical advocacy, and community participation created opportunities for environmental engagement that extended beyond conventional awareness campaigns. Rather than interacting with environmental issues solely through information dissemination, participants encountered marine conservation through direct experience, creative expression, and community action. These findings are consistent with contemporary environmental communication scholarship, which argues that public engagement with environmental challenges is often strengthened when communication strategies move beyond scientific information and incorporate cultural, emotional, and participatory dimensions (Moser 2016; Corner et al. 2018). Environmental issues such as marine pollution are frequently characterised by psychological distance, whereby individuals recognise a problem but do not necessarily perceive it as directly connected to their daily lives (van der Linden et al. 2015). In the present study, the process of collecting waste from beaches, transforming it into artworks, and communicating environmental messages through music appeared to reduce this distance by making marine pollution visible, tangible, and personally relevant.

From the perspective of Social Practice Theory, the findings suggest that the project engaged the three interconnected elements that shape social practices: materials, meanings, and competencies (Shove et al. 2012). Ocean waste served as the material component, environmental advocacy and artistic symbolism contributed new meanings, and participation in clean-up activities and workshops supported the development of competencies related to environmental stewardship. The interaction of these elements offers a plausible explanation for the active engagement observed during the intervention, although the design does not permit strong causal claims about which elements mattered most.

Community participation and environmental stewardship

One notable finding was the willingness of community members, traditional leaders, and local stakeholders to participate in project activities. The results suggest that participants did not perceive the project solely as an environmental intervention but also as an initiative connected to community development, cultural representation, and local visibility. This observation aligns with evidence that environmental stewardship is often strengthened when conservation initiatives are embedded within local social and cultural contexts. Bennett et al. (2017) argue that environmental programmes are more likely to achieve community support when they recognise local values, identities, and aspirations, and Sterling et al. (2017) found that conservation interventions tend to be more durable when stakeholder engagement acknowledges the cultural dimensions of environmental management rather than focusing exclusively on ecological outcomes.

Participants in the present study frequently connected cleaner beaches with improved community image, economic opportunities, and sustainable development prospects. Such perspectives resonate with contemporary blue economy discourse, which emphasises the integration of environmental sustainability, social inclusion, and economic growth, while also recognising that different actors interpret the blue economy in different ways (Voyer et al. 2018; Lee et al. 2020). The findings therefore suggest that environmental advocacy initiatives may benefit from framing conservation not only as an ecological responsibility but also as an issue connected to community aspirations and development priorities.

Music as a medium for environmental communication

A further finding concerns the role of music in facilitating engagement during awareness campaigns. Observations and participant feedback indicated that music attracted attention, encouraged participation, and created opportunities for conversations about marine pollution and environmental responsibility. This is consistent with research emphasising the communicative potential of music within sustainability contexts. Musicians engaged in environmental advocacy describe music as a means of creating emotional connections that complement cognitive understanding (Publicover et al. 2018), and ecomusicology scholarship has documented the varied ways in which music mediates human relationships with the environment (Pedelty 2012; Allen and Dawe 2016). Environmental communication scholars have similarly argued that emotional engagement plays an important role in motivating public interest in environmental issues, because factual information alone does not always lead to behavioural

reflection or action (Chapman et al. 2017). The findings of the present study are consistent with this argument: participants frequently engaged with environmental messages during musical performances, suggesting that music functioned as a culturally familiar medium through which conservation ideas could be discussed.

The findings also align with work by Galafassi et al. (2018), which suggests that artistic and creative practices can contribute to sustainability transformations by helping communities imagine alternative futures and develop new narratives around environmental responsibility. In this study, music appeared to facilitate such narrative construction by linking marine conservation messages with local cultural experiences and everyday realities. It should be noted, however, that these interpretations rest on observational and self-reported data gathered during the intervention; the study did not test the relative effectiveness of musical and non-musical formats under controlled conditions.

Experiential learning through beach clean-up activities

The findings suggest that participation in beach clean-up exercises influenced how participants perceived marine pollution. Community members who took part in the removal of debris often commented on the quantity and diversity of waste materials encountered, suggesting that direct engagement with environmental problems may enhance awareness in ways that differ from conventional awareness campaigns. This is consistent with experiential learning theory, which holds that knowledge is created through the transformation of concrete experience (Kolb 2015), and with environmental education research: Monroe et al. (2019) found that environmental learning is often more effective when individuals engage directly with environmental issues through participatory and experiential activities, and Ardoin et al. (2020) report that environmental education interventions involving active participation tend to promote deeper understanding because participants connect abstract concepts with observable realities. The present findings also resonate with research on participation in conservation activities, which links hands-on stewardship to stronger engagement with environmental issues (Larson et al. 2015; Ardoin et al. 2020).

However, caution is required when interpreting these findings. While participants expressed increased awareness during and immediately after the intervention, the study did not assess whether such awareness resulted in behavioural change. Previous research indicates that awareness alone does not necessarily translate into sustained environmental action, particularly where structural challenges such as inadequate waste management systems persist (Steg and Vlek 2009; Nielsen et al. 2021).

Artistic transformation of marine waste and environmental meaning-making

A central observation of the study was that the process of transforming marine waste into artworks encouraged participants to reconsider the significance of materials previously regarded as rubbish. Throughout the workshops, discussions increasingly focused on the environmental stories embedded within the collected debris and the potential of artistic expression to communicate conservation

messages. This aligns with scholarship on environmental art and sustainability: Kagan (2011) argues that environmental art provides opportunities for individuals to engage with ecological issues through creative reflection, allowing environmental concerns to be experienced in ways that extend beyond scientific explanation, and cultural policy scholarship contends that arts-based initiatives can stimulate environmental dialogue by making sustainability issues visible within public spaces and everyday life (Duxbury et al. 2017). The findings also support work on upcycling and creative reuse: Sung (2015) suggests that upcycling contributes to sustainability not only through waste reduction but also by encouraging alternative ways of thinking about material consumption and disposal, and cultural analyses of waste emphasise that changing our relations to rubbish is as much an ethical and cultural process as a technical one (Hawkins 2006). Participants in this study appeared to undergo a similar process, gradually shifting from viewing collected debris as waste to viewing it as a resource capable of carrying environmental meaning.

Furthermore, the installation of artworks at participating beaches extends the potential significance of this finding. Public environmental artworks may function as long-term visual prompts that encourage reflection on environmental issues and strengthen place-based environmental identities (Curtis et al. 2014; Devine-Wright and Clayton 2010). Whether the installations created through this project sustain such influence within the communities where they are displayed is an empirical question that the present study, given its timeframe, cannot answer.

Practical interventions and environmental behaviour

Another finding concerns the positive reception of waste bin donations across participating communities. Participants frequently described the donated bins as practical resources capable of supporting improved waste management practices. This observation speaks to an important issue within environmental behaviour research: awareness initiatives are often more effective when accompanied by supportive infrastructure. Steg and Vlek (2009) note that environmentally responsible behaviour depends not only on attitudes and values but also on contextual factors and practical opportunities for action, a point developed further in environmental psychology (Steg and de Groot 2019) and in work on pro-environmental communication (Klöckner 2015). In the present study, the provision of waste bins addressed a practical aspect of waste management by creating opportunities for proper disposal. The findings therefore suggest though they cannot demonstrate that combining awareness programmes with practical environmental infrastructure may be more promising than implementing either strategy independently. This observation is particularly relevant within coastal communities where inadequate waste management systems can contribute to marine pollution.

Implications for practice, policy, and community development

The findings have tentative implications for environmental practice, policy, and community development. For practitioners, the results suggest that creative approaches such as music and visual art can complement traditional environmental education methods by creating additional pathways for

engagement; environmental organisations working within coastal communities may therefore benefit from collaborating with artists, musicians, and cultural practitioners when designing awareness campaigns. For policymakers, the findings highlight the potential value of integrating cultural and creative sectors into environmental management strategies. Environmental policies often focus primarily on technical interventions such as waste collection, regulation, and infrastructure development; while these remain essential, the study suggests that cultural engagement can contribute to public participation and community ownership of environmental initiatives. This position is consistent with UNESCO's recognition of culture as a key enabler of sustainable development (UNESCO 2022).

The findings also carry implications for blue economy planning. Participants frequently linked environmental sustainability with tourism, community identity, and economic opportunities. These observations reinforce arguments that environmental conservation and social equity should be treated as foundational components of blue economy development rather than as separate objectives (Bennett et al. 2021). Healthy coastal environments are not only ecological assets but also social, cultural, and economic resources. At the community level, the study illustrates how environmental action can be integrated into everyday life through visible, locally relevant interventions: the donated waste bins and installed artworks provide tangible reminders of environmental responsibility that may contribute to ongoing community discussions about waste management and marine conservation.

Emerging questions and future research directions

Several questions remain unresolved. First, future studies should investigate the long-term impacts of artistic and music-based interventions on environmental behaviour: although participants demonstrated engagement during the project, it remains unknown whether these experiences lead to sustained changes in waste management practices or conservation participation. Second, further research could examine how different demographic groups respond to multisensory environmental advocacy; the present study involved participants from diverse backgrounds but did not systematically compare responses across age groups, occupations, or educational levels. Third, future investigations could evaluate the longer-term influence of the installed artworks themselves; research examining visitor interactions with the artworks over time would provide valuable insight into the capacity of public art to sustain environmental awareness beyond the lifespan of specific projects. Finally, comparative studies involving other coastal regions within Nigeria and across Africa would help determine whether the patterns observed here are transferable to different social, cultural, and environmental contexts.

Strengths and limitations

One of the principal strengths of this study lies in its interdisciplinary approach, which combined environmental restoration, artistic production, music-based advocacy, and community participation within a single intervention framework, enabling environmental issues to be explored from ecological, social, cultural, and educational perspectives simultaneously. Another strength is the participatory nature of the project: community members were involved not only as respondents but as contributors to clean-up activities, artistic production, and advocacy efforts, which enhanced the contextual relevance of the

findings and created opportunities for community ownership of project outcomes. The use of multiple qualitative data sources (observation, interviews, informal discussion, field notes, and documentary records) and researcher triangulation during analysis further supports the credibility of the account presented.

The limitations of the study are, however, substantial and should be stated plainly.

First, the study was geographically and temporally bounded. It was conducted at three coastal sites in Lagos State over a short field period (February to April 2026). The findings describe these specific communities during and immediately after the intervention and may not transfer to other settings, seasons, or timescales.

Second, the study design does not support causal inference. There was no baseline measurement, comparison group, or follow-up assessment. Statements associating the intervention with heightened awareness or engagement describe observed and reported patterns, not measured effects. In particular, the study cannot determine whether the intervention changed environmental awareness or behaviour, or whether more engaged individuals simply chose to participate.

Third, the evidence base is perceptual and self-reported. Findings rest largely on participants' accounts and researchers' observations gathered during project activities. Such data are vulnerable to social desirability bias and to the enthusiasm that often accompanies novel community events, and expressed attitudes may not correspond to subsequent behaviour (Steg and Vlek 2009; Nielsen et al. 2021).

Fourth, the participatory design carries an inherent risk of researcher influence. Because the researchers were also the designers and facilitators of the intervention, their presence and involvement may have shaped participants' responses, and interpretation of the data cannot be fully separated from the team's investment in the project. Researcher triangulation and analytical memoing were used to mitigate, but cannot eliminate, this risk.

Fifth, data collection was deliberately flexible. No structured survey instruments or fixed interview schedules were used, no sampling frame was applied, and participation varied across sites and activities. This flexibility is consistent with Participatory Action Research but means that the breadth and representativeness of the perspectives captured cannot be quantified, and that responses across demographic groups could not be systematically compared.

Sixth, the study did not quantify environmental outcomes. The quantity and composition of waste removed were not systematically measured, and the durability of the practical interventions the donated waste bins and the installed artworks was not assessed. Longitudinal data would be required to determine whether the observed engagement is maintained over time.

Consequently, the results should be interpreted as evidence of participant perceptions and engagement during a short-term creative intervention, and as a proof of concept for multisensory environmental advocacy in a developing coastal context, rather than as proof of attitudinal or behavioural change.

Conclusion and contributions

This study contributes to the growing literature on arts-based environmental communication by providing contextually grounded, preliminary evidence that the integration of participatory art, music, and direct ecological action can serve as a meaningful complement to conventional environmental education strategies in coastal communities of the Global South. Theoretically, it extends the application of Social Practice Theory to multisensory advocacy, illustrating how the simultaneous engagement of materials (marine waste), meanings (conservation symbolism), and competencies (hands-on participation) may support environmental engagement among community members. From a blue economy perspective, the study reinforces the argument that cultural and creative engagement should be considered an integral dimension of sustainable coastal development rather than an auxiliary one. Practically, the findings offer a replicable, comparatively low-resource advocacy model that artists, environmental NGOs, educators, and local governments can adapt to support marine conservation outreach in diverse coastal contexts. These contributions are necessarily preliminary, and their significance will be strengthened as subsequent research examines long-term outcomes and tests the model's applicability across varied settings.

Declarations

Data availability

This study was based on qualitative field observations, photographic documentation, and participatory engagement records generated during the NRF/TETFund Blue Economy Research Project (Grant No.: TETF/ES/DR&D-CE/NRF2024/CC/BEC/00071/VOL.I). The consolidated field reports documenting all project activities have been submitted as supplementary material alongside this manuscript. No survey instruments, structured numerical datasets, or statistical scripts were generated, as the study employed Participatory Action Research methodology and thematic analysis within a Social Practice Theory framework. Researchers wishing to request access to the underlying observational records and photographic documentation should contact the corresponding author.

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Ethical approval

Ethical approval for the research was obtained from the Yaba College of Technology Research Ethics Committee. Permission to conduct activities at each beach and waterfront site was obtained through

formal correspondence with the relevant beach management authorities, community leaders, and local government representatives prior to the commencement of field activities.

Informed consent

Participants were informed about the objectives and procedures of the study, participation was voluntary, and informed consent was obtained before interviews and other forms of data collection. Participants were informed of their right to withdraw at any stage without penalty, and confidentiality and anonymity were maintained throughout.

Competing interests

The authors declare no competing interests.

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