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Appraisal of Community-Based Environmental Education on Residents' Attitudes and Participation in Environmental Stewardship in Ogoni Land

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ABSTRACT

The study appraised how community-based environmental education (CBEE) impacts on residents' attitudes towards participation in environmental stewardship in Ogoni land. Specifically, it examined the level of CBEE awareness among residents; influence of CBEE on residents' attitudes toward environmental protection and participation in environmental stewardship activities. Descriptive survey design was adopted for this study. Population of the study consisted of 456 members of community-based organizations (CBOs), mostly farmers and fisherfolk, who had taken part in CBEE programmes, all the CBO members were sampled using total (census) sampling. Data was collected through the use of a structured and validated four point Likert Scale questionnaire titled "Community-Based Environmental Education on Residents' Attitudes and Participation in Environmental Stewardship Questionnaire". Data collected were analysed with mean and standard deviation. Findings reveals community residents in Ogoni land to a high level are aware of CBEE; CBEE had a significant positive impact on Ogoni residents' attitudes toward environmental protection and that residents' involvement in environmental stewardship in Ogoni is significantly enhanced by CBEE. Based on the findings, the study recommended that organisers of CBEE programme should include more hands-on workshops, such as waste-sorting demonstrations, composting training sessions, and oil-spill response orientations, to strengthen beneficiaries positive attitudes towards participation in environmental stewardship.

Keywords: ***Community-Based Environmental Education (CBEE), Attitudes, Participation, Environmental Stewardship***

Introduction

Ogoniland stands as a global case study showing how extractive industries, insufficient regulation, and poor environmental management harm ecosystems and communities. Oil exploration and related activities in Ogoni communities have polluted the area for over fifty years, damaging farmland, fisheries, mangroves, and drinking water sources. Today, environmental degradation significantly threatens Ogoni communities, many communities in Ogoiland now face pollution, biodiversity loss, climate risks, and diminished ecosystem services each of which threatens survival and development. These changes affect local health and livelihoods and shape people's perceptions of and involvement in environmental conservation. As a result, environmental education plays a crucial role in raising awareness, influencing attitudes, and promoting responsible environmental practices among individuals and communities (Monroe et al., 2017).

Oil exploration has severely contaminated Ogoni Land, endangering farmland, rivers, wetlands, groundwater, and the health and livelihood of residents (UNEP, 2011). UNEP Environmental assessment report in 2011 confirmed severe petroleum contamination in Ogoni Land, highlighting the urgent need for cleanup and community engagement. Water, sediment, and wells showed high levels of petroleum hydrocarbons, including areas where benzene exceeded safety limits.

Oil pollution has clearly damaged fisheries, soil, mangroves, and water. Given this context, ongoing pollution has made poverty, food insecurity, and health problems worse for Ogoni people who depend on small-scale farming and fishing. Many creeks and wetlands that were once full of life are now so polluted that fishermen have to travel farther or stop fishing altogether (UNEP, 2011). Damaged soil and recurring oil spills have reduced crop yields and weakened cultural ties. These problems also include social and political issues such as the unfair distribution of benefits, marginalization, and violence, making environmental harm a matter of justice (Ojo & Olaniyi, 2017; Energy in Nigeria, 2024). After UNEP's 2011 report, a cleanup plan was developed. The Federal Government established the Hydrocarbon Pollution Remediation Project (HYPREP) to lead cleanup efforts, provide safe water, support public health, and help restore livelihoods in Ogoni communities (HYPREP, 2025).

Despite ongoing cleanup initiatives, sustainable recovery in Ogoniland depends on empowering communities through Community-Based Environmental Education (CBEE). Unlike general environmental awareness programs, CBEE builds specific knowledge and skills in residents to not only identify and understand environmental problems unique to their context but also to empower them to create and drive solutions tailored to their needs. This community-

centered approach fosters local ownership of cleanup efforts, ensures cultural relevance, and enables long-term stewardship. As noted by Okorie & Ijah (2020), CBEE transforms communities from passive victims into active stewards uniquely catalyzing action in areas where rapid, locally driven responses are needed for lasting change. CBEE relies on hands-on, group-based learning rooted in community experience. It stands apart by connecting learning directly to residents' daily lives, using local issues as the foundation for joint problem-solving. It is a locally driven education, where communities identify problems and organize solutions together. Because many adults in rural areas have little formal education, CBEE's experiential, community-based method is especially impactful. Okorie and Ijah (2020) emphasize that this group approach not only fosters cooperation and reflection but also addresses region-specific problems such as climate risk, oil theft, and mangrove loss, making CBEE uniquely positioned to raise awareness and foster effective cooperation.

Unlike conventional classroom education, CBEE is based on local knowledge, shared community values, and indigenous leadership. Its distinguishing strength lies in aligning directly with Ogoni aspirations for justice and cultural preservation while driving practical, community-rooted action. By facilitating conservation, restoration, advocacy, and practical skills such as pollution reporting and policy support, CBEE enables meaningful public participation where trust in official efforts is low. In Ogoniland, CBEE-driven responsibility is the linchpin of restoration. Despite uneven progress and ongoing challenges since the UNEP report, CBEE offers a distinct, trust-building path towards sustainable recovery amid persistent disputes and cultural struggles. Against this background, education and awareness are widely recognized as key factors in how empowered people feel, how well they understand environmental issues, and their willingness to work together for change (Agbor et al., 2025; UNESCO cited in Agbor et al., 2025).

However, Okorie and Ijah (2020) noted that while CBEE supports sustainability through learning and group action, many factors affect stewardship. Years of environmental damage in Ogoniland have led to distrust and a lack of involvement. Economic pressures can push people toward harmful activities like illegal logging, fishing, and "kpofire." To address these gaps, CBEE aims to fill knowledge gaps, correct misunderstandings, rebuild trust, and change behavior. However, it is still unclear how much these programs actually improve stewardship and attitudes, despite efforts by the government and NGOs. Given these uncertainties, assessing the impact of CBEE on residents' knowledge, attitudes, and stewardship is central to determining whether these programs truly empower communities to restore Ogoniland. This study directly investigates whether CBEE closes knowledge gaps, strengthens positive attitudes, and builds essential foundations for meaningful recovery. By clarifying CBEE's local effects, this research aims to guide policies and programs for lasting community-led restoration.

Statement of the Problem

After more than 50 years of oil extraction, Ogoniland still faces serious environmental damage from oil spills, gas flaring, pipeline leaks, artisanal refining, and poor management. Ongoing pollution continues to threaten health, livelihoods, and food security. Even with HYPREP and other efforts underway, much of the damage remains, highlighting the urgent need for strong community stewardship. In response, local groups, NGOs, and the government have launched CBEE programs to encourage stewardship. Still, many Ogoni residents may not fully understand the long-term effects of their actions. As a result, many residents continue to harm the environment by improperly disposing of waste, supporting oil refining, and ignoring spills. These actions reveal gaps in knowledge, distrust, competing needs, and weak CBEE strategies. Low engagement and understanding make it unclear how effective CBEE is at changing behavior.

Thus, it remains uncertain how well education programs change local attitudes, responsibility, and involvement in restoration. Without clear evidence of CBEE's impact, the main stewardship challenges may persist. This research appraised how CBEE affects community dwellers' attitudes and participation in environmental stewardship in ogoni land.

Research Objectives

1. Examine the level of community-based environmental education awareness among residents of Ogoni Land.
2. Examine the influence of community-based environmental education on residents' attitudes toward environmental protection in Ogoni.
3. Assess the influence of community-based environmental education on residents' participation in environmental stewardship activities.

Research Questions

1. What is the level of community-based environmental education awareness among residents of Ogoni Land?
2. To what extent does community-based environmental education influence residents' attitudes toward environmental protection in Ogoni?
3. To what extent does community-based environmental education influence residents' participation in environmental stewardship activities?

Conceptual Clarifications

Community-Based Environmental Education (CBEE)

Community-based environmental education (CBEE) centers on engaging residents in learning about and addressing local environmental concerns to foster sustainable actions in their community. Okorie and Ijah (2020) describe CBEE as educational processes occurring within the community, focusing on developing environmental awareness, cognitive capacity, and emotional connections to environmental issues. The aim is to increase public knowledge about climate change and inspire environmentally conscious behavior. Ardoin, Bowers, and Gaillard (2020) emphasized CBEE's focus on experiential, participatory, and locally-oriented learning that connects environmental knowledge to cultural and community needs. Monroe et al. (2017) noted that, unlike formal education, CBEE uses informal means such as community meetings and workshops to promote environmental literacy and stewardship. Ballantyne and Packer (2019) highlighted that CBEE enables resource-dependent communities to identify issues, evaluate human impacts, and

collaboratively develop context-appropriate solutions. CBEE ultimately aims to improve both environmental quality and community well-being through place-based, participatory approaches that tie learning directly to local environmental action.

Environmental Attitudes

Environmental attitudes are central to understanding how individuals and communities relate to environmental challenges and opportunities. They significantly influence people's willingness to support environmental legislation, adopt eco-friendly behaviors, and participate in stewardship. The term refers to people's beliefs, emotions, values, and inclinations toward environmental protection. Clayton et al. (2021) defined environmental attitudes as psychological tendencies reflected in evaluations of environmental issues and ecological actions. More broadly, attitude theory defines an attitude as a reasonably persistent inclination to assess an item favorably or unfavorably. This concept is specifically applied to environmental issues and the natural environment through environmental attitudes.

Milfont defines environmental attitudes as psychological tendencies reflected in evaluations of the natural environment and in influences on its quality. Similarly, Gifford and Sussman emphasize their evaluative and value-laden nature, depicting them as caring for environmental matters. These perspectives highlight that environmental attitudes extend beyond ecological knowledge; they encompass beliefs (such as acceptance of human-caused climate change), feelings (like worry or indifference), and intentions for action (e.g., recycling, conserving energy, supporting policies).

As a result, many writers regard environmental attitudes as a confluence of cognitive (beliefs), affective (feelings), and intentions to act (behavior). Environmental attitudes can be general or specific. General attitudes concern the environment as a whole. Specific attitudes concern issues such as plastic waste, biodiversity conservation, and renewable energy. Schultz says that people's feelings about certain actions, such as recycling, may not always align with their broader attitudes toward the environment or the prevalence of pro-environmental attitudes. A comparatively linear chain was expected by early environmental education models: environmental knowledge → good attitudes → pro-environmental behavior. Pro-environmental behavior, such as recycling, conservation, pollution control, and involvement in environmental campaigns, is predicted by positive environmental attitudes. It is widely acknowledged that environmental education plays a significant role in shaping environmental attitudes, especially when presented in context-based, interactive ways.

Environmental Stewardship

Environmental stewardship is responsible behavior that protects, conserves, and manages natural resources sustainably. It merges moral, social, and ecological duties to ensure ecosystems are viable now and in the future. Chapin et al. (2009) describe stewardship as both a concept and a set of behaviors adopted by individuals, communities, organizations, and governments to preserve and enhance the environment. It entails responsible use and care for nature through ethical commitment, sustainable practices, and informed decision-making. Worrell and Appleby (2000) note that stewardship arose from recognizing the environmental impact of human actions and the need to replace exploitative resource use with responsibility. Growing ecological awareness and the need for sustainable living further reinforced this shift. Thus, environmental stewardship embodies conservation, community involvement, sustainable development, and ecological responsibility (Bennett et al., 2018). Bennett et al. (2018) specify stewardship as comprising behaviors, attitudes, and governance that support ecological health. Examples include waste management, ecosystem restoration, pollution control, and sustainable agriculture. Effectiveness depends on environmental knowledge, motivation, perceived duty, and community engagement. Environmental stewardship is often divided into individual, community-based, and institutional types. Individual stewardship focuses on personal choices that reduce environmental impact, such as recycling and energy conservation.

In community-based stewardship, local organizations work together to manage and restore natural resources. This strategy is based on the idea that local communities are best positioned to understand environmental issues and provide appropriate solutions. Local conservation efforts, coastline cleanups, and community forest management are a few examples.

Environmental stewardship plays a key role in raising awareness, encouraging sustainable development, and strengthening ecosystem resilience. Initiatives such as reforestation, land restoration, and conservation education support biodiversity and ecological health. By empowering people and communities to manage natural resources, stewardship fosters environmental citizenship, especially in areas facing environmental degradation, stewardship programs help mitigate unsustainable practices and build adaptive capacity. However, short-term economic priorities can limit participation.

Community Participation in Environmental Stewardship.

The active involvement of local citizens in the preservation, management, and enhancement of their natural environment through group efforts and shared accountability is known as community participation in environmental stewardship. It is based on the idea that communities, as direct consumers and guardians of local resources, are best positioned to plan, make decisions, execute, and oversee environmental projects. Community participation strengthens the social capital required for long-term environmental sustainability, encourages bottom-up strategies, and increases community involvement in environmental stewardship, meaning local people work together to care for and improve their local environment. It is based on the idea that communities know best about their resources and should plan, decide on, do, and check environmental projects (Berkes, 2004). Participation builds the teamwork needed for lasting environmental results, encourages local solutions, and makes people feel responsible. Stewardship becomes more efficient, equitable, and contextually relevant when communities are granted agency and responsibility (Chapin et al., 2011 .2011).

Integrating local ecological knowledge (LEK) into environmental management is one of the main benefits of community involvement. Community members living closest to the natural environment have long made observations and practices reflected in LEK. According to Berkes et al. (2000), LEK improves conservation results by offering information on seasonal variations, species behavior, and sustainable harvesting methods. Initiatives to conserve

biodiversity, monitor fisheries, and manage forests locally all benefit greatly from this kind of information. Through group action, community involvement is also essential to environmental stewardship. A common sense of duty and environmental citizenship is fostered by group activities, including community clean-ups, tree-planting campaigns, trash management projects, and environmental education initiatives. Collective stewardship initiatives improve social networks and foster trust among neighbors, which encourages continued involvement even more. Additionally, these events provide forums for increasing public awareness and for organizing local resources to enhance the environment. Additionally, by encouraging co-management agreements, successful community involvement improves environmental governance. Co-management entails government or non-governmental organizations (NGOs) and communities sharing planning and accountability. This cooperative approach enhances transparency, accountability, and public trust in environmental regulations.

This study is based on Mezirow's (2018) Transformative Learning Theory, which emphasizes critical reflection, behavior change through learning, and a shift in worldviews. In CBEE programmes, residents take part in waste audits, group discussions on local pollution, and health risk workshops that prompt self-examination and encourage environmentally friendly practices. By presenting targeted information about pollution and environmental duties, CBEE programmes challenge assumptions, promote new environmental values, and support behavior change.

Methodology

A descriptive survey was used to gather data from Ogoni community residents on their environmental awareness, attitudes, stewardship participation, and the effects of CBEE programmes. Surveys are useful for collecting the views and experiences of many people at once (Creswell, 2014). This research took place in Ogoni communities in Rivers State, Nigeria, including Bori, K-Dere, Kegbara-Dere, and Goi. These areas were chosen because they have faced long-term environmental damage from oil activities and have been involved in CBEE projects led by HYPREP, and Non Governmental Organisations (NGOs). The study included 456 members of community-based organizations (CBOs), mostly farmers and fisherfolk, who had taken part in CBEE programs. The whole group was included in the sample using total (census) sampling (Neman, 2014). Data were collected using a structured and validated questionnaire titled "Community-Based Environmental Education on Residents' Attitudes and Participation in Environmental Stewardship Questionnaire". The questionnaire was designed in a modified Likert scale of Very High Level/Very High Extent (4), High Level/High Extent, (3); Low Level/Low Extent (2), and Very Low Level/Very Low Extent(3) format. The questionnaire was tested first on 10 CDC members who were not part of the main study.

Reliability was assessed using Cronbach's alpha to evaluate the questionnaire's consistency. The three groups of research questions had Cronbach's alpha values of 0.81, 0.75 and 0.82, with an overall score of 0.79. This shows that the questionnaire was reliable and suitable for the study. The principal investigator and two trained assistants, who were briefed on the study's goals and methods, helped administer the questionnaire and assisted respondents as needed. The researcher also worked with community leaders to organize the respondents. The researcher and assistants collected the completed copies of questionnaire immediately to prevent loss and ensure they were filled out correctly. Of the 456 questionnaires distributed, 451 were rightly completed, yielding a 98.9% response rate. The data was analyzed using mean and standard deviation.

Results and Analysis

Research Question 1: What is the level of community-based environmental education awareness among residents of Ogoni Land?

Table 1: Mean Analysis of Level of Community-Based Environmental Education Awareness Among Residents of Ogoni Land

S/N	Statements	CDCs Members			N= 451				
		VHE	HE	LE	VLE	Total	x̄	SD	Decision
1	Through community gatherings, you have learned about environmental education.	95 (380)	217 (651)	99 (198)	40 (40)	451 (1269)	2.81	0.87	High Level
2	Residents are frequently given environmental education messages by local community leaders.	290 (1160)	3 (9)	154 (308)	4 (4)	451 (1481)	3.28	0.97	High Level
3	You are aware of the goal of Ogoni Land's community-based environmental education.	233 (932)	16 (48)	183 (366)	19 (19)	451 (1365)	3.02	1.04	High Level
4	You are aware of where to find information about waste management and environmental sanitation.	283 (1132)	-	152 (304)	61 (61)	451 (1497)	3.31	1.18	High Level

S/N	Statements	CDCs Members			N= 451				
		VHE	HE	LE	VLE	Total	x̄	SD	Decision
5	In my community, you have taken part in at least one environmental education event.	118 (472)	129 (387)	199 (398)	5 (5)	451 (1262)	2.79	0.84	High Level
6	You are aware of the part locals play in CBEE-promoted environmental preservation initiatives.	153 (612)	138 (552)	100 (200)	60 (60)	451 (1424)	2.85	1.03	High Level
7	Ogoni Land NGOs frequently offer environmental education materials.	124 (496)	124 (372)	180 (360)	23 (23)	451 (1251)	2.77	0.91	High Level
8	Children in your community's schools are encouraged to be environmentally conscious.	184 (736)	232 (696)	12 (24)	23 (23)	451 (1479)	3.27	0.75	High Level
9	You are aware of the environmental rules and laws that have an impact on my neighborhood.	94 (376)	176 (528)	157 (314)	24 (24)	451 (1242)	2.75	0.84	High Level
10	You are aware of Ogoni Land's NGOs and community-based organizations that promote environmental education.	215 (860)	75 (225)	158 (316)	3 (3)	451 (1404)	3.11	0.91	High Level
	Grand Mean						**2.99**	**0.93**	**High Level**

Table 4.1 shows that residents of Ogoni Land exhibit a high level of awareness of community-based environmental education (CBEE). According to the respondents, there is considerable exposure to environmental education through community events and leadership structures, with community leaders recognized as essential promoters of environmental consciousness. The objectives of CBEE, access to waste management information, and residents' roles in environmental conservation all received high average scores, indicating widespread knowledge within the communities. Although participation in environmental education events was somewhat lower than other indicators, it still fell within the high awareness range. The data demonstrate that NGOs, community-based organizations, and educational institutions are instrumental in fostering environmental awareness in Ogoni Land. Respondents indicated considerable awareness of initiatives spearheaded by NGOs, the availability of educational resources, and the strong promotion of environmental consciousness among children in schools. Knowledge of environmental laws was markedly high, though slightly lower, indicating potential for enhanced sensitization. The overall grand mean of 2.99 suggests that CBEE structures are well established and effectively disseminated throughout Ogoni Land, with support from various community institutions

Research Question Two: To what extent does community-based environmental education influence residents' attitudes toward environmental protection in Ogoni?

Table 2: Mean Analysis of Extent to which Community-Based Environmental Education Influenced Residents' Attitudes Toward Environmental Protection in Ogoni

S/N	Statements	CDCs Members			N= 451				
		VHE	HE	LE	VLE	Total	x̄	SD	Decision
11	By taking part in community-based environmental education, you have learned practical ways to protect the environment.	118 (472)	270 (810)	45 (90)	18 (18)	451 (1390)	3.00	0.69	High Extent
12	you now understand why protecting the environment matters because you joined community-based environmental education,.	159 (636)	144 (432)	100 (200)	48 (48)	451 (1316)	2.91	0.86	High Extent
13	Being involved in community-based environmental education has changed how you think about waste disposal.	85 (340)	195 (585)	110 (220)	61 (61)	451 (1206)	2.67	0.82	High Extent

S/N	Statements	CDCs Members		N= 451					
		VHE	HE	LE	VLE	Total	x̄	SD	Decision
14	Community-based environmental education has encouraged you to take personal responsibility for protecting the environment.	113 (452)	199 (597)	93 (186)	46 (46)	451 (1281)	2.84	0.77	High Extent
15	You feel more concerned about the effects of oil pollution in Ogoni because of the environmental education provided.	150 (600)	133 (399)	150 (300)	18 (18)	451 (1317)	2.92	0.94	High Extent
16	Community-based environmental education programs in your area have strengthened your belief that everyone shares responsibility for protecting the environment.	225 (900)	101 (303)	57 (114)	68 (68)	451 (1385)	3.07	1.15	High Extent
17	Taking part in community-based environmental education has made you more interested in getting every resident involved in community clean-up activities.	110 (440)	261 (783)	32 (64)	48 (48)	451 (1335)	2.96	0.84	High Extent
18	What you have learned from community-based environmental education has made you willing to adopt environmentally friendly practices.	177 (708)	136 (408)	88 (176)	50 (50)	451 (1342)	2.97	1.01	High Extent
19	After joining community-based environmental education activities, you feel motivated to teach others about protecting the environment.	138 (552)	203 (609)	95 (190)	15 (15)	451 (1366)	3.02	0.79	High Extent
20	By taking part in community-based environmental education, you now see environmental protection as a key priority for sustainable development in Ogoni	183 (732)	110 (330)	109 (218)	49 (49)	451 (1329)	2.94	1.08	High Extent
	Grand Mean						**2.93**	**0.89**	**High Extent**

The findings presented in Table 4.2 indicate that community-based environmental education (CBEE) has a significant positive effect on Ogoni residents' attitudes toward environmental protection. Respondents consistently noted that CBEE helped them acquire practical methods for environmental protection, deepen their understanding of its importance, and shape their views on suitable waste-disposal practices. The initiative fostered individual accountability and heightened awareness of ecological problems, including oil contamination. Certain items exhibited moderate variability in responses; however, the overall trend suggests a significant attitudinal change influenced by CBEE. CBEE established the idea of environmental protection as a collective duty, encouraging residents to engage in cleanup efforts and embrace sustainable habits. A number of participants broadened these endeavors by championing environmental conservation in the community. Consequently, environmental stewardship is now widely recognized as crucial to the sustainable development of Ogoni. The grand mean of 2.93 summarizes these outcomes, highlighting the significant influence of CBEE on attitudes, awareness, and both individual and collective environmental action.

Research Question Three: To what extent does community-based environmental education influence residents' participation in environmental stewardship activities?

Table 4.3: Mean Analysis of Extent to which Community-Based Environmental Education Influence Residents' Participation in Environmental Stewardship Activities

S/N	Statements	CDCs Members		N= 451					
		VHE	HE	LE	VLE	Total	x̄	SD	Decision
21	Participation in community-based environmental education programmes has enhanced your awareness of local environmental issues.	160 (640)	157 (471)	117 (234)	17 (17)	451 (1 362)	3.02	0.91	High Extent
22	The knowledge acquired through community environmental education has motivated you to participate in environmental clean-up activities.	128 (512)	160 (480)	103 (206)	60 (60)	451 (1258)	2.78	0.89	High Extent
23	Community environmental workshops have deepened your understanding of the importance of responsible waste disposal.	225 (900)	64 (192)	79 (158)	83 (83)	451 (1333)	2.95	1.24	High Extent
24	You have increased your participation in tree-planting activities as a result of information provided by community-based environmental education.	186 (744)	168 (504)	60 (120)	37 (37)	451 (1405)	3.12	0.97	High Extent
25	Environmental education initiatives within your community have encouraged you to volunteer for environmental stewardship projects.	262 (1056)	85 (255)	17 (34)	87 (87)	451 (1432)	3.17	1.21	High Extent
26	Training provided by community environmental educators has strengthened your ability to take action on environmental problems.	187 (748)	121 (363)	42 (84)	101 (101)	451 (1296)	2.87	1.23	High Extent
27	Community-based environmental education has enhanced your willingness to join community environmental committees.	117 (468)	143 (429)	146 (292)	45 (45)	451 (1234)	2.73	0.92	High Extent
28	You have become more confident in engaging in environmental conservation activities as a result of the knowledge gained from community education programmes.	131 (524)	228 (684)	60 (120)	32 (32)	451 (1360)	3.01	0.82	High Extent
29	Community environmental campaigns have influenced your decision to reduce, reuse, and recycle waste materials.	128 (512)	226 (678)	76 (152)	21 (21)	451 (1363)	3.02	0.78	High Extent
30	Participation in environmental education forums has increased your commitment to protecting natural resources.	166 (664)	147 (441)	83 (166)	55 (55)	451 (1326)	2.94	0.88	High Extent
	Grand Mean						2.96	0.98	High Extent

Table 4.3 sows that community-based environmental education (CBEE) has a significant effect on residents' involvement in environmental stewardship activities in Ogoni. The mean scores for all assessed indicators exceeded the criterion mean of 2.50, indicating considerable impact. Residents noted that participation in CBEE programs increased their awareness of local environmental issues, encouraged involvement in cleanup efforts, and enhanced their understanding of proper waste-disposal practices. Tree planting, volunteerism, and practical skills were promoted through educational initiatives to tackle environmental challenges, highlighting CBEE's dual role as an informational and behavioral catalyst for environmental action. Moreover, CBEE was found to enhance civic engagement, with residents showing a greater willingness to participate in environmental committees and conservation activities. It has been noted that environmental campaigns and forums advance sustainable waste management practices and bolster dedication to safeguarding natural resources. The consistently elevated average scores across all items suggest that CBEE effectively fosters environmental awareness, motivates

behavioral change, and empowers residents to actively participate in community-driven sustainability efforts, underscoring its considerable impact on environmental stewardship in Ogoni.

Discussion of Findings

Level of Community-Based Environmental Education Awareness Among Residents of Ogoni Land

The study's findings demonstrate that respondents have a high level of exposure to environmental education through community gatherings, as reflected in a mean score of 2.81. The considerable awareness of CBEE among residents of Ogoni Land aligns with empirical studies that underscore the vital role of community participation in environmental education. In same vein, studies by Hungerford and Volk (1990) and Tilbury (1995) shows that when communities engage in participatory structures such as local leadership and meetings, awareness of environmental issues increases significantly. The significant role of community leaders in Ogoni as facilitators aligns with these findings, indicating that trusted local figures are crucial for mediating environmental knowledge and promoting responsible behaviors. The contributions of NGOs, community-based organizations, and schools to residents' environmental knowledge correspond with empirical studies showing that involvement from multiple institutions enhances outreach and the sustainability of environmental programs. According to Monroe, Andrews, and Biedenweg (2007), NGOs and formal education systems provide vital informational and motivational resources that improve community-based initiatives.

In Ogoni, the increased awareness of initiatives led by NGOs and educational environmental programs highlights the importance of diverse methods for spreading knowledge. It confirms that collaboration across different sectors can improve the effectiveness of community-based environmental education. The results suggest that residents' understanding of their responsibilities in environmental conservation and their access to waste management information correspond with research indicating that environmental literacy encompasses both awareness and actionable knowledge. Effective environmental education equips individuals with the knowledge and practical skills needed to make a positive impact on their environment. In Ogoni, the residents' deep comprehension of their responsibilities illustrates that CBEE has progressed beyond mere awareness to foster informed stewardship, which is a vital trait of effective systemic environmental education programs.

Participation in environmental education events was somewhat lower than awareness levels, consistent with research indicating that knowledge does not always lead to active involvement, when awareness is high, participation can be limited by structural barriers, social norms, and competing priorities. This underscores a potential enhancement for Ogoni: augmenting opportunities for involvement and addressing specific limitations to ensure that awareness more reliably translates into active environmental stewardship.

Ogoni's awareness of environmental laws is relatively low, which aligns with broader conclusions from research on environmental governance. According to UNESCO (2017), legal literacy is often lacking in CBEE programs, underscoring the need for targeted efforts to improve community members' understanding of regulatory frameworks and their implementation. This implies that while there is strong general awareness and knowledge in Ogoni's CBEE system, targeted efforts to enhance legal literacy could strengthen compliance and foster sustainable environmental outcomes.

RQ2: Community-Based Environmental Education and Residents' Attitudes Toward Environmental Protection in Ogoni

The study shows that CBEE had a significant positive impact on Ogoni residents' attitudes toward environmental protection, especially through enhancing their understanding of environmental issues, knowledge of waste management, and sense of responsibility. Evidence from practice strengthens the case for the effectiveness of activity-based environmental education in shaping knowledge and attitudes. CBEE increased awareness of oil pollution and environmental issues in Ogoni, consistent with research showing that participatory education programs foster greater understanding and action. The research corroborates that hands-on CBEE activities, such as meetings and demonstrations, played a role in fostering positive attitudinal change. A major outcome is that CBEE bolstered residents' feelings of shared responsibility for safeguarding the environment and spurred involvement in community clean-ups and eco-friendly practices, corroborating evidence that CBEE promotes collective action by strengthening social bonds.

The present results suggested that residents involved in CBEE often shared their knowledge with other community members, thereby expanding environmental awareness beyond the original programme participants. This illustrates the intergenerational and community diffusion effects highlighted by Husin, Nengsih, & Helmi (2024), who found that environmental education for youth in Indonesia positively affected parental environmental knowledge and household behaviors. This evidence bolsters the ripple effect noted in Ogoni, where participants became advocates, thus expanding CBEE's influence in the wider community. The overall grand mean of 2.93 indicates that CBEE resulted in a significant attitudinal change among residents. This discovery aligns with earlier studies by Husin, Nengsih, & Helmi (2024) that established that environmental education predominantly affects attitudes through perceived increases in knowledge, rather than through demographic or structural factors. According to Ambe, et al. (2025), among Nigerian university students, the factor that best predicts positive sustainability attitudes is perceived learning, rather than program duration or participants' characteristics. This aligns with the findings of the present research that it is meaningful learning opportunities, rather than merely program duration or demographic factors, that influence environmental attitudes among Ogoni individuals. The findings collectively demonstrate that CBEE in Ogoni heightened environmental awareness, strengthened attitudes, and encouraged participation at both individual and group levels. CBEE is becoming an essential tool for encouraging sustainable behavior in regions facing environmental degradation.

RQ3: Communirty-Based Environmental Education Influence on Residents' Participation in Environmental Stewardship Activities

Residents' involvement in environmental stewardship in Ogoni is significantly enhanced by CBEE, as evidenced by Table 3. The increased average scores confirm CBEE's effect on awareness, waste management, and active participation, consistent with studies demonstrating its contribution to behavior

change. The results are consistent with earlier studies showing that context-specific knowledge is a stronger predictor of pro-environmental behavior than general environmental information (Martínez-Maldonado & Ontiveros-Pacheco, 2024). CBEE programs in Ogoni, which are based on local ecological challenges, appear to leverage this specificity to improve stewardship initiatives. Studies focusing on environmental education rooted in community service suggest that participatory learning enhances attitudes, knowledge, and practical environmental actions reflecting the behavioral results observed in Ogoni.

The research reinforces the idea that community involvement has a considerable effect on pro-environmental behavior. Zhang et al. (2020) demonstrated that engaging in community structures significantly boosts conservation activities, a trend observed in Ogoni, where CBEE encourages participation in environmental committees and local initiatives. The observed behavioral reactions align with experimental findings indicating that experiential environmental education significantly increases the likelihood of participating in stewardship actions such as waste sorting, conservation efforts, and environmental advocacy (Hsu et al., 2024). In summary, the results confirm that CBEE is an effective tool for encouraging environmental stewardship in Ogoni. Its capacity to merge knowledge, community participation, and hands-on involvement to promote lasting pro-environmental behavior is underscored.

Conclusion

In conclusion, community-based environmental education (CBEE) has three key impacts among Ogoni residents: it increases environmental consciousness, cultivates positive attitudes, and fosters active stewardship. High awareness suggests well-established CBEE structures; significant attitude shifts indicate that residents see environmental protection as a collective responsibility; and strong participation in stewardship activities demonstrates that CBEE inspires concrete conservation actions. Together, these findings highlight CBEE's significant role in driving sustainable practices and community-led ecological protection in Ogoni.

Recommendations

1. To boost active participation, community leaders, NGOs, and local institutions should enhance mobilisation strategies such as community-based contests, incentives, and regular interactive forums.
2. Given that CBEE helps residents adopt practical environmental protection methods, it would be beneficial for organisers to include more hands-on workshops, such as waste-sorting demonstrations, composting training sessions, and oil-spill response orientations, to strengthen positive attitudes.
3. Local authorities should form community environmental brigades to plant trees, conduct cleanups, and raise awareness about waste management.

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