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Role of Community Participation in Land Restoration and Environmental Management in Nasarawa State, Nigeria

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Abstract

This study examined the role of community participation in land restoration and environmental management in Nasarawa State, Nigeria, with emphasis on assessing the level and forms of community participation in restoration activities. A descriptive survey research design was adopted. The study was conducted in Akwanga, Karu, and Obi Local Government Areas representing the three senatorial zones of the State. A sample size of 382 respondents was determined using the Krejcie and Morgan (1970) sample size table, of which 360 valid questionnaires (94%) were retrieved and analysed. Primary data were collected through structured questionnaires, key informant interviews, and field observations, while secondary data were obtained from relevant literature. Data were analysed using the Statistical Package for the Social Sciences (SPSS) with descriptive statistics comprising frequencies and percentages. The findings revealed a high level of community participation in land restoration activities. The majority of respondents reported active involvement in the protection of restored forest areas (89%), environmental monitoring (89%), participation in restoration decision-making (87%), tree planting (84%), and bush-burning control (79%). The study recommends strengthening community-based restoration programmes through continuous environmental education, provision of technical support and incentives, and greater collaboration with traditional institutions and community leaders to sustain restoration outcomes.

Keywords: *Community participation, Land restoration, Environmental management, Sustainable development, Nasarawa State.*

Introduction

Land is one of the most important natural resources supporting human survival, economic development and ecosystem functioning. It provides the basis for agriculture, settlement, biodiversity conservation, water regulation and the provision of essential ecosystem services. However, increasing population pressure, deforestation, unsustainable agricultural practices, urbanization, mining, overgrazing and climate change have accelerated land degradation in many parts of the world.

Land restoration has consequently become a major global environmental priority, particularly within international efforts to achieve land degradation neutrality and sustainable development. In China, community participation and local institutional arrangements have contributed to the implementation of ecological restoration and watershed management programmes, although the effectiveness of such initiatives varies according to institutional and socio-economic conditions (Cao et al., 2018). Participatory forest management has demonstrated the importance of involving local communities in forest protection, biodiversity conservation, and sustainable resource management in India (Lund et al., 2018; FAO, 2022). The significance of community participation in environmental management is strongly supported by the argument that local communities possess valuable knowledge of their environment and are directly affected by environmental degradation and restoration interventions. Local communities can effectively manage common-pool resources when governance arrangements promote locally

developed rules, active participation, effective leadership, and collective monitoring (Okumu & Muchapondwa, 2020; Salk et al., 2021). However, community participation is not automatically effective merely because local people are included in a project. The quality of participation, equitable distribution of decision-making power, fair access to benefits, strong local institutions, and recognition of community rights are critical determinants of successful environmental and natural resource management (FAO, 2022; IPBES, 2022).

Several African countries have demonstrated the importance of community involvement in environmental restoration and natural resource management. In Ethiopia**,** participatory watershed and forest management programmes have significantly contributed to the rehabilitation of degraded landscapes through soil and water conservation, afforestation, and sustainable land management practices. Recent studies indicate that active community participation has improved forest condition, strengthened local institutions, and enhanced household livelihood assets, although challenges related to governance and equitable benefit-sharing persist (Girma et al., 2023; Walle & Nayak, 2022). Similarly, community-based natural resource management programmes in Namibia and Zimbabwe demonstrate that devolving resource management authority to local communities can improve conservation outcomes and support rural livelihoods when accompanied by secure land tenure, effective local institutions, and equitable benefit-sharing mechanisms (Heffernan, 2022; Naidoo et al., 2021). Across Africa, recent scholarship emphasizes that community participation should extend beyond consultation to meaningful involvement in planning, implementation, monitoring, and decision-making. Restoration initiatives that fail to recognize indigenous knowledge, customary institutions, and local livelihood priorities are less likely to achieve sustainable environmental outcomes (Matuk et al., 2020; Mansourian, 2021).

Nigeria faces serious environmental challenges associated with land degradation, including deforestation, soil erosion, desertification, loss of vegetation, flooding, unsustainable agricultural practices and the degradation of forest and agricultural resources. These challenges have important implications for rural livelihoods, food production, and environmental sustainability. Land degradation is driven by the interaction of natural and anthropogenic factors. Deforestation, agricultural expansion, population growth, urban expansion, overgrazing, and unsustainable land-use practices continue to accelerate the degradation of natural resources across Nigeria (Adeyanju et al., 2023; Fasona et al., 2022). In southeastern Nigeria, gully erosion remains one of the most severe environmental challenges, causing extensive loss of agricultural land, destruction of infrastructure, displacement of rural communities, and increasing threats to livelihoods and environmental sustainability (Nzereogu et al., 2023; Fagbohun et al., 2024). In northern Nigeria, desertification and vegetation degradation continue to undermine agricultural productivity, reduce ecosystem services, and threaten the livelihoods of rural communities through declining soil fertility, loss of vegetation cover, and increasing climate variability (Abdulkadir et al., 2023; Olagunju et al., 2024). Given the scale and complexity of these environmental challenges, government-led approaches alone have often been insufficient. Community participation is increasingly recognized as an important component of sustainable environmental management in Nigeria. Local communities possess indigenous knowledge and practical experience concerning land-use practices, vegetation management, soil conservation and the use of natural resources. Their participation can contribute to the identification of environmental problems, planning of restoration interventions, implementation of conservation activities and monitoring of restored areas. Meaningful stakeholder participation enhances local ownership, strengthens social learning, improves collective decision-making, and increases the long-term sustainability of environmental and natural resource management interventions (Bennett et al., 2019; Chambers et al., 2021).

Nasarawa State provides an important setting for examining the role of community participation in land restoration and environmental management. The State is endowed with agricultural land, forest reserves, savanna vegetation, rangelands and other natural resources that support the livelihoods of rural communities. However, increasing population pressure, agricultural expansion, deforestation, bush burning, unsustainable exploitation of forest resources, grazing pressure, mining and other human activities have contributed to environmental degradation in different parts of the State because of the state's proximity to the Federal Capital Territory (FCT) Abuja. These pressures have implications for soil fertility, vegetation cover, biodiversity conservation, agricultural production and the sustainability of rural livelihoods. Chunwate et al. (2026) posit that community perceptions, local involvement, cultural practices and collaboration between communities and government institutions are important considerations in the management and sustainability of forest reserves in Nasarawa State. Studies on community participation in rural development have shown that involving local populations improves the relevance, effectiveness, and sustainability of development interventions by promoting local ownership, collective responsibility, and community capacity (Gamo & Park, 2022; Kammer-Kerwick et al., 2022). In the context of land

restoration, local communities can participate through tree planting, assisted natural regeneration, soil and water conservation, sustainable agricultural practices, bush-burning control, protection of restored areas and local environmental monitoring. Their involvement is particularly important because restoration projects may not achieve lasting results if communities are excluded from decisions concerning land resources on which they depend.

Despite the growing recognition of community participation in environmental management, there remains a need for further empirical assessment of how local communities contribute to land restoration and environmental management in Nasarawa State. Therefore, this study examines the role of community participation in land restoration and environmental management in Nasarawa State, Nigeria.

Objectives of the Study

i. To assess the level and forms of community participation in land restoration and environmental management activities in Nasarawa State.
ii. To examine the factors influencing community participation and its contribution to the sustainability of land restoration initiatives.

Empirical Review of Literature

Girma, Melka, Haileslassie, & Mekuria, (2023) examined the contribution of participatory forest management to livelihood improvement and forest degradation mitigation in the Central Rift Valley of Ethiopia. The study adopted a mixed-methods approach involving household surveys, focus group discussions, and key informant interviews among forest-dependent communities. The findings revealed that active community participation significantly improved forest conditions, enhanced household livelihood assets, and increased awareness of sustainable forest management. However, unequal benefit-sharing and weak institutional coordination constrained the sustainability of the programme. The study recommended strengthening local governance structures and ensuring equitable distribution of restoration benefits. The study focused primarily on participatory forest management and livelihood improvement in Ethiopia without examining broader land restoration activities such as soil restoration, erosion control, environmental monitoring, and sustainable land management. In addition, the socio-economic and institutional conditions differ considerably from those in Nasarawa State, Nigeria.

Heffernan, (2022) evaluated community-based natural resource management programmes in Namibia using qualitative interviews, documentary analysis, and field observations. The study found that devolving resource management responsibilities to local communities strengthened biodiversity conservation and improved local livelihoods. However, unequal power relations, weak benefit-sharing arrangements, and inadequate institutional support limited programme effectiveness. The study focused mainly on wildlife conservation and natural resource governance rather than land restoration and environmental management. Furthermore, the institutional framework differs significantly from Nigeria's environmental governance system.

Fagbohun, Aladejana, Okonye, & Tobore (2024) assessed gully erosion susceptibility in the Agulu–Nanka watershed of southeastern Nigeria using Geographic Information Systems and machine learning techniques. The study established that land-use change, vegetation loss, and poor watershed management significantly increased erosion risks. The authors recommended afforestation, watershed protection, and improved land management practices. The study focused on erosion susceptibility modelling rather than community participation in restoration activities. It also concentrated on southeastern Nigeria and cannot adequately explain restoration practices in Nasarawa State.

Chunwate, Marchant, Jew, & Stringer (2026) investigated community perceptions of conservation management and the sustainability of protected area reserves in Nasarawa State using household surveys, focus group discussions, and stakeholder interviews. The study found that local perceptions, indigenous cultural practices, collaboration between communities and government agencies, and stakeholder involvement significantly influenced conservation outcomes. However, inadequate stakeholder engagement and limited economic incentives constrained effective participation. Although the study was conducted in Nasarawa State, it focused specifically on protected area conservation rather than broader land restoration and environmental management. It did not assess the different forms and levels of community participation or examine the factors influencing participation in restoration activities such as afforestation, soil conservation, assisted natural regeneration, erosion control, and environmental monitoring.

Theoretical Framework

This study is underpinned by Community-Based Natural Resource Management (CBNRM) and Participatory Development Theories, both of which emphasize the importance of involving local communities in the sustainable management of natural resources.

Community-Based Natural Resource Management (CBNRM) advocates the decentralization of natural resource management by empowering local communities to participate in planning, implementation, monitoring, and decision-making (Armitage et al., 2020). The theory

assumes that local people possess valuable indigenous knowledge and are more likely to protect and sustainably manage natural resources when they are actively involved and derive benefits from conservation initiatives. In the context of this study, CBNRM explains how community participation in activities such as tree planting, soil conservation, assisted natural regeneration, and environmental monitoring can enhance the sustainability of land restoration programmes in Nasarawa State.

Participatory Development Theory, advanced by Chambers (1994), argues that development interventions are more effective and sustainable when beneficiaries actively participate in identifying problems, planning, implementing, and evaluating projects. The theory emphasizes empowerment, local ownership, collective decision-making, and the integration of indigenous knowledge into development initiatives (Chambers et al., 2021). Meaningful participation strengthens community commitment, improves project relevance, and enhances the long-term sustainability of environmental management interventions.

The integration of these theories provides a suitable framework for this study by explaining that effective land restoration depends not only on government intervention but also on active community involvement, strong local institutions, and collaboration among stakeholders. Consequently, the study examines how the level and forms of community participation, together with the factors influencing participation, contribute to sustainable land restoration and environmental management in Nasarawa State.

Methodology

The study was conducted in three Local Government Areas (LGAs) representing the three senatorial (geo-political) zones of Nasarawa State: Akwanga LGA (Nasarawa North), Karu LGA (Nasarawa West), and Obi LGA (Nasarawa South)**.** These LGAs were purposively selected because they experience varying degrees of land degradation and environmental management activities. The target population comprised 743,400 inhabitants, representing the combined population of Akwanga, Karu, and Obi LGAs. A sample size of 382 respondents was determined using the Krejcie and Morgan (1970) sample size determination table. A multistage sampling technique was employed to select the respondents. First, the three LGAs were purposively selected; thereafter, communities and households were selected using simple random and systematic sampling techniques.

Table 1: Showing Population of the Study

Local Government Areas	**Population**
Akwanga Karu LGA	192,628 372,074
Obi LGA	178,700
Total	**743,400**

Source: (World Population Review, 2026).

Data for the study were obtained from both primary and secondary sources. Primary data were collected through structured questionnaires, key informant interviews, and field observations. The questionnaire was designed using a five-point Likert scale consisting of Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD), and was administered to household heads in the selected communities. Key informant interviews were conducted with officials of the Nasarawa State Ministry of Environment, ACReSAL Project and community leaders. Secondary data were obtained from journal articles, government reports, and other relevant publications.

The collected quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including frequencies and percentages, were used to analyse the level and forms of community participation. Secondary data from journal articles were subjected to documentary analysis to complement the primary data and address the study objectives.

Data Presentation

Table 2: Number of Questionnaire Administered and Retrieved

Options	Frequency	%
Retrieved	360	94
Unreturned	22	6
Total	**382**	**100**

Table 2 presents the number of questionnaires administered and retrieved from the respondents. A total of 382 questionnaires were distributed across the selected study areas. Out of these, 360 questionnaires, representing 94%, were successfully completed and returned, while 22 questionnaires (6%) were not returned. The high retrieval rate of 94% indicates an excellent response rate, suggesting a high level of cooperation and willingness among respondents to participate in the study. The returned questionnaires were considered adequate for data analysis and are sufficiently representative of the study population, thereby enhancing the reliability and validity of the study findings. The small proportion of unreturned questionnaires (6%) is unlikely to have a significant effect on the overall results of the study.

Table 3: Level and Forms of Community Participation in Land Restoration and Environmental Management

Statement	SA	A	U	D	SD	Total
Community members participate in tree planting activities.	182 (51%)	120 (33%)	15 (4%)	25 (7%)	18 (5%)	360 (100 %)
Members participate in environmental sanitation exercises.	122 (34%)	132 (37%)	40 (11%)	50 (14%)	16 (4%)	360 (100 %)
Community members participate in bush-burning control.	144 (40%)	140 (39%)	18 (5%)	34 (9%)	24 (7%)	360 (100 %)
Community members protect restored forest areas.	190 (53%)	130 (36%)	10 (3%)	15 (4%)	15 (4%)	360 (100 %)
Community members engage in environmental monitoring.	180 (50%)	141 (39%)	9 (2%)	17 (5%)	13 (4%)	360 (100 %)
Community members participate in awareness campaigns.	100 (28%)	98 (27%)	40 (11%)	80 (22%)	42 (12%)	360 (100 %)
Community members participate in decision-making on restoration activities.	188 (52%)	126 (35%)	13 (4%)	28 (8%)	5 (1%)	360 (100 %)

Table 3 presents the respondents' views on the level and forms of community participation in land restoration and environmental management in the selected communities of Nasarawa State. The results indicate a generally high level of community involvement in most restoration and environmental management activities. The findings show that 84% of the respondents either strongly agreed (51%) or agreed (33%) that community members participate in **tree** planting activities, while only 12% disagreed or strongly disagreed and 4% were undecided. This suggests that tree planting is one of the major land restoration activities undertaken by community members. Regarding environmental sanitation exercises**,** 71% of the respondents agreed that community members actively participate, comprising 34% who strongly agreed and 37% who agreed. However, 18% disagreed, while 11% were undecided, indicating that participation in sanitation activities is relatively high but not as widespread as other restoration activities. Similarly, 79% of the respondents affirmed that community members participate in bush-burning control, with 40% strongly agreeing and 39% agreeing. Only 16% disagreed or strongly disagreed, while 5% were undecided. This implies that communities recognize the importance of controlling bush burning as a strategy for protecting vegetation and reducing land degradation. The results further reveal that 89% of the respondents agreed that community members protect restored forest areas, comprising 53% who strongly agreed and 36% who agreed. Only 8% expressed disagreement, while 3% remained undecided. This indicates a strong sense of community responsibility toward protecting restored ecosystems. Participation in environmental monitoring was also high, as 89% of the respondents agreed that community members engage in monitoring environmental conditions, with 50% strongly agreeing and 39% agreeing. Only 9% disagreed, while 2% were undecided, suggesting active community involvement in monitoring restoration activities. In contrast, participation in environmental awareness campaigns recorded the lowest level of agreement among the activities examined. Only 55% of respondents agreed that community members participate in awareness campaigns, whereas 34% disagreed or strongly disagreed and 11% were undecided. This finding suggests that awareness creation and environmental education programmes require greater attention to improve community participation. Finally, the study found that 87% of the respondents agreed that community members participate in decision-making on land restoration activities, with 52% strongly agreeing and 35% agreeing. Only 9% disagreed, while 4% were undecided. This indicates that local communities are substantially involved in decisions concerning environmental management and restoration initiatives. The findings demonstrate that community participation in land restoration and environmental management is generally high in the study area, particularly in tree planting, protection of restored forest areas, environmental monitoring, bush-burning control, and decision-making. However, participation in environmental awareness campaigns is comparatively lower, highlighting the need for increased environmental education and sensitization programmes to strengthen community involvement in land restoration initiatives.

Most communities are willing to participate in restoration activities whenever they are adequately mobilised and supported. Their local knowledge and commitment are essential for the long-term sustainability of restoration programmes (KII/Female/34/MOENR/June/2026).

The findings are consistent with those of Girma et al. (2023), who reported that active community participation in participatory forest management significantly improved forest conditions and strengthened local stewardship of natural resources in Ethiopia. Similarly, Chunwate et al. (2026) found that community involvement, indigenous knowledge, and collaboration between local communities and government institutions were fundamental to the sustainability of protected area management in Nasarawa State. These studies support the argument that community participation enhances environmental stewardship and contributes to sustainable land restoration.

Tree planting and protecting community forests have become part of our annual activities because we understand that the forest provides fuelwood, protects our farms, and helps reduce erosion. However, more awareness campaigns are needed to encourage wider community participation (KII/Male/46/Obi/July/2026).

Table 4: Factors Influencing Community Participation in Land Restoration and Environmental Management.

Statement	SA	A	U	D	SD	Total
Awareness of environmental degradation encourages participation.	164 (45%)	126 (35%)	12 (3%)	32 (9%)	27 (8%)	360 (100 %)
Government support motivates participation.	172 (48%)	130 (36%)	18 (5%)	27 (8%)	13 (3%)	360 (100 %)
Availability of incentives increases participation.	162 (45%)	140 (39%)	18 (5%)	22 (6%)	18 (5%)	360 (100 %)
Traditional institutions encourage participation.	190 (53%)	130 (36%)	10 (3%)	15 (4%)	15 (4%)	360 (100 %)
Community leadership influences participation.	176 (49%)	128 (36%)	20 (5%)	22 (6%)	14 (4%)	360 (100 %)
Access to environmental education promotes participation.	120 (34%)	100 (28%)	80 (22%)	30 (8%)	30 (8%)	360 (100 %)
Secure land ownership encourages restoration activities.	188 (52%)	126 (35%)	13 (4%)	28 (8%)	5 (1%)	360 (100 %)
Community cooperation influences participation.	168 (47%)	126 (35%)	18 (5%)	28 (8%)	20 (5%)	360 (100 %)

Table 4 presents the respondents' perceptions of the factors influencing community participation in land restoration and environmental management in the study area. The results indicate that several institutional, socio-economic, and governance-related factors significantly influence community participation. The findings show that 80% of the respondents agreed that awareness of environmental degradation encourages community participation, comprising 45% who strongly agreed and 35% who agreed. In contrast, 17% disagreed, while 3% were undecided. This suggests that increased awareness of environmental challenges motivates community members to engage in restoration and conservation activities. Regarding government support, 84% of the respondents agreed that it motivates community participation, with 48% strongly agreeing and 36% agreeing. Only 11% disagreed, while 5% were undecided. This indicates that government assistance through funding, technical support, extension services, and policy implementation plays a crucial role in encouraging local participation in environmental management. Similarly, 84% of the respondents agreed that the availability of incentives increases participation in land restoration activities. Specifically, 45% strongly agreed and 39% agreed, while 11% disagreed and 5% were undecided. This finding suggests that incentives such as the provision of tree seedlings, farming inputs, financial assistance, or recognition encourage greater community involvement. The results further reveal that 89% of the respondents agreed that traditional institutions encourage participation in restoration activities, with 53% strongly agreeing and 36% agreeing. Only 8% disagreed, while 3% were undecided. This demonstrates the significant influence of traditional rulers and community institutions in mobilising local people for environmental conservation. Similarly, 85% of the respondents agreed that community leadership influences participation in land restoration activities, comprising 49% who strongly agreed and 36% who agreed. Only 10% disagreed, while 5% were undecided, indicating that effective local leadership promotes collective action and community mobilization. Furthermore, 62% of the respondents agreed that access to environmental education promotes community participation, with 34% strongly agreeing and 28% agreeing. However, 22% were undecided, while 16% disagreed. Compared with the other factors, this recorded the lowest level of agreement, suggesting that environmental education and awareness programmes require further strengthening to improve community engagement. The study also found that 87% of the respondents agreed that secure land ownership encourages restoration activities, with 52% strongly agreeing and 35% agreeing. Only 9% disagreed, while 4% were undecided. This implies that secure land tenure provides confidence for individuals and communities to invest in long-term restoration activities. Finally, 82% of the respondents agreed that community cooperation influences participation in land restoration and

environmental management, with 47% strongly agreeing and 35% agreeing. Only 13% disagreed, while 5% were undecided. This indicates that cooperation, trust, and collective responsibility among community members are important drivers of successful restoration initiatives.

Overall, the findings indicate that secure land traditional institutions (89%), ownership (87%), community leadership (85%), government support (84%), availability of incentives (84%), community cooperation (82%), and awareness of environmental degradation (80%) are the major factors influencing community participation in land restoration and environmental management. In contrast, access to environmental education (62%) received the lowest level of agreement, highlighting the need for greater investment in environmental education and public sensitization programmes.

The findings are consistent with Bennett et al. (2019), who reported that environmental awareness, effective governance, and institutional support strengthen local participation in conservation initiatives. Similarly, Gamo and Park (2022) found that incentives, social capital, and community leadership significantly influence participation in sustainable rural development programmes.

> *Government support remains one of the strongest drivers of community participation. Whenever communities receive tree seedlings, technical guidance, and regular sensitization, their level of participation increases significantly. Traditional rulers and community leaders also play an important role in mobilizing residents and ensuring that restoration activities are sustained. (KII/Male/51/Karu/July/2026).*

This interview corroborates the survey findings by highlighting the importance of government support, traditional institutions, and community leadership in promoting effective community participation in land restoration and environmental management.

Table 5: Contribution of Community Participation to Sustainable Land Restoration

Statement	SA	A	U	D	SD	Total
Community participation has reduced land degradation.	182 (51%)	120 (33%)	15 (4%)	25 (7%)	18 (5%)	360 (100 %)
Participation has improved vegetation cover.	122 (34%)	132 (37%)	40 (11%)	50 (14%)	16 (4%)	360 (100 %)
Participation has reduced soil erosion.	144 (40%)	140 (39%)	18 (5%)	34 (9%)	24 (7%)	360 (100 %)
Participation has enhanced soil fertility.	100 (28%)	98 (27%)	120 (34%)	30 (8%)	12 (3%)	360 (100 %)
Participation has improved biodiversity conservation.	180 (50%)	141 (39%)	9 (2%)	17 (5%)	13 (4%)	360 (100 %)
Participation has increased environmental awareness.	100 (28%)	98 (27%)	40 (11%)	80 (22%)	42(12%)	360 (100 %)
Participation has improved the sustainability of restoration projects.	188 (52%)	126 (35%)	13 (4%)	28 (8%)	5 (1%)	360 (100 %)
Participation has strengthened community ownership of restoration projects.	188 (52%)	126 (35%)	13 (4%)	28 (8%)	5 (1%)	360 (100 %)

Table 5 presents the respondents' perceptions of the contribution of community participation to sustainable land restoration and environmental management in the study area. The results indicate that community participation has made significant contributions to environmental restoration and the sustainability of natural resource management initiatives. The findings reveal that 84% of the respondents agreed that community participation has reduced land degradation, comprising 51% who strongly agreed and 33% who agreed. Only 12% disagreed, while 4% were undecided. This indicates that active involvement of local communities in restoration activities has contributed to mitigating land degradation in the study area. Similarly, 71% of the respondents agreed that community participation has improved vegetation cover, with 34% strongly agreeing and 37% agreeing. However, 18% disagreed, while 11% were undecided. This suggests that restoration activities such as tree planting and protection of degraded areas have contributed to increased vegetation cover. Regarding soil erosion control, 79% of the respondents agreed that community participation has reduced soil erosion, consisting of 40% who strongly agreed and 39% who agreed. In contrast, 16% disagreed and 5% were undecided. This implies that community-led conservation measures, including tree planting and bush-burning control, have contributed to reducing soil erosion in the study area. The results further show that respondents expressed mixed opinions on whether community participation has enhanced soil fertility. Only 55% agreed with the statement, while 34% were undecided and 11% disagreed. This finding suggests that although restoration efforts may have improved some aspects of land quality, noticeable improvements in soil fertility may require a longer period before becoming evident. Furthermore, 89% of the respondents agreed that community participation has improved biodiversity conservation, comprising 50% who

strongly agreed and 39% who agreed. Only 9% disagreed, while 2% were undecided. This demonstrates that community involvement has contributed to the protection of plant and animal species and the conservation of natural habitats. The findings also reveal that 55% of the respondents agreed that community participation has increased environmental awareness, with 28% strongly agreeing and 27% agreeing. However, 34% disagreed, while 11% were undecided. This relatively lower level of agreement suggests that environmental awareness campaigns have not yet reached all segments of the communities and require further strengthening. The study further found that 87% of the respondents agreed that community participation has improved the sustainability of restoration projects, comprising 52% who strongly agreed and 35% who agreed. Only 9% disagreed, while 4% were undecided. Likewise, 87% agreed that community participation has strengthened community ownership of restoration projects, indicating that involving local communities enhances their commitment to maintaining restored landscapes and environmental resources. Overall, the findings indicate that community participation has contributed most significantly to biodiversity conservation (89%), the sustainability of restoration projects (87%), community ownership of restoration projects (87%), reduction of land degradation (84%), and reduction of soil erosion (79%). However, comparatively lower levels of agreement were recorded for improved soil fertility (55%) and increased environmental awareness (55%), suggesting that these aspects require sustained interventions and long-term investment.

The key informant interview also corroborated the survey findings. An official from the Nasarawa State ACReSAL Project stated:

> *Communities that participate actively in tree planting, protection of forest reserves, and environmental monitoring have recorded noticeable improvements in vegetation cover and reduced land degradation. We have also observed that projects are better maintained when the communities are directly involved from the planning stage because they develop a sense of ownership and responsibility (KII/Male/58/ACReSAL/June/2026).*

The findings are consistent with Girma et al. (2023), who reported that community participation in participatory forest management significantly improved forest condition, biodiversity conservation, and household livelihoods in Ethiopia. Similarly, Mansourian (2021) observed that long-term community engagement is fundamental to achieving sustainable forest and landscape restoration because it strengthens local ownership and improves ecosystem resilience. The observed reduction in land degradation and soil erosion also agrees with FAO (2022), which noted that community-led restoration initiatives, including afforestation, assisted natural regeneration, and sustainable land management, contribute significantly to restoring degraded landscapes and improving ecosystem services.

A community leader from Akwanga LGA remarked:

> *Since our community started participating in tree planting and protecting restored areas, cases of indiscriminate bush burning have reduced, and more people now understand the importance of conserving our environment for future generations (KII/Male/52/Akwanga/June/2026).*

Discussion of Findings

i. The study found a high level of community participation in land restoration and environmental management activities across the selected communities in Nasarawa State. The findings revealed that respondents actively participate in tree planting, protection of restored forest areas, environmental monitoring, bush-burning control, environmental sanitation, and decision-making concerning restoration activities. This demonstrates that local communities are not merely beneficiaries of restoration programmes but are actively involved in their implementation and management. The high participation observed supports the principles of the Community-Based Natural Resource Management (CBNRM) and Participatory Development theories, which emphasize that sustainable natural resource management is more effective when local communities actively participate in planning, implementation, and monitoring (Armitage et al., 2020; Chambers et al., 2021). The findings agree with those of Girma et al. (2023), who reported that participatory forest management significantly improved forest protection, community stewardship, and sustainable resource management in Ethiopia. Similarly, Chunwate et al. (2026) found that indigenous knowledge, community participation, and collaboration between government institutions and local communities enhanced the sustainability of protected area management in Nasarawa State. The findings are further supported by the key informant interviews, where officials of the Ministry of Environment observed that communities actively participate in restoration programmes whenever they are adequately mobilized and supported. Likewise, community leaders confirmed that tree planting and forest protection have become regular

community activities because residents recognize their environmental and livelihood benefits. However, the comparatively lower participation recorded in environmental awareness campaigns suggests that greater investment in environmental education and public sensitization is required to strengthen community engagement further.

ii. The study established that several institutional, socio-economic, and governance-related factors influence community participation in land restoration. These include environmental awareness, government support, availability of incentives, traditional institutions, community leadership, secure land ownership, environmental education, and community cooperation. Among these, traditional institutions, secure land ownership, government support, incentives, and community leadership emerged as the most influential factors. Furthermore, the study found that community participation has contributed significantly to reducing land degradation, improving vegetation cover, controlling soil erosion, conserving biodiversity, strengthening community ownership, and enhancing the sustainability of restoration projects. These findings corroborate the work of Bennett et al. (2019), who argued that effective governance, stakeholder collaboration, and institutional support strengthen community participation in environmental management. Similarly, Mansourian (2021) maintained that secure land tenure, local ownership, and inclusive governance are critical prerequisites for successful forest and landscape restoration. The findings also support FAO (2022) and Girma et al. (2023), who reported that community-led restoration initiatives improve ecosystem recovery, biodiversity conservation, and the long-term sustainability of restoration programmes. Evidence from the key informant interviews further validates these findings, as officials of the Ministry of Environment and the ACReSAL Project noted that government support, provision of tree seedlings, technical assistance, and collaboration with traditional leaders significantly increase community participation and improve restoration outcomes. Although the study found positive contributions of community participation to sustainable land restoration, the relatively lower ratings for environmental education and improvement in soil fertility suggest that continuous capacity building, awareness creation, and long-term restoration investments remain necessary to sustain environmental gains in Nasarawa State.

Conclusion

This study concludes that community participation plays a vital role in land restoration and environmental management in Nasarawa State. The findings revealed that local communities actively participate in restoration activities such as tree planting, forest protection, environmental monitoring, and decision-making. The study further established that factors such as government support, traditional institutions, community leadership, secure land ownership, and environmental awareness significantly influence participation, while active community involvement contributes to reducing land degradation, improving biodiversity conservation, and enhancing the sustainability of restoration initiatives.

Recommendations

i. Government and relevant environmental agencies should strengthen community-based restoration programmes by providing continuous environmental education, technical support, tree seedlings, and incentives to encourage greater participation in land restoration and environmental management activities.

ii. Traditional institutions, community leaders, and local organisations should be actively integrated into the planning, implementation, and monitoring of restoration projects to strengthen community ownership, improve participation, and ensure the long-term sustainability of land restoration initiatives in Nasarawa State.

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