International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/

Vol. 56 No. 1 March 2026, pp. 46-56

Appraising Impact Of Community-Based Conservation On Environmental Protection And Rural Economic Development In Rivers State

Bell-Gam, Roseline Soprinye[1], Okorie, Christiana Uzoaru[2]

[1]Department of Adult and Non-Formal Education
University of Port Harcourt
roseline.bell-gam@uniport.edu.ng
[2]Department of Adult and Non-Formal Education
University of Port Harcourt
christiana.okorie@uniport.edu.ng
Corresponding Author: Bell-Gam, Roseline Soprinye

Abstract: This study examined the effectiveness of Community-Based Conservation (CBC) in fostering sustainable livelihoods, income generation, and environmental preservation in rural communities in Rivers State, Nigeria, Data were gathered from community members, key informants, and secondary sources using both qualitative and quantitative methodologies to evaluate the social, economic, and environmental effects of CBC, as well as the difficulties associated with its implementation. The results showed that CBC made a substantial contribution to ecosystem restoration, including increased forest cover, improved wetland management, recovery of fish populations, and reduced illicit logging. Additionally, it enhanced household livelihoods and promoted ecological stewardship by producing jobs and revenue through ecotourism and sustainable agriculture. Nevertheless, the study noted limitations, including a lack of funding, insufficient technical know-how, subpar infrastructure, and sporadic clashes between conservation goals and local communities' demands for a living. Based on the findings, the study recommended integrating traditional knowledge, democratic decision-making, and supportive policy frameworks to promote the longevity and effectiveness of CBC efforts, and that, for CBC to be a workable strategy for rural development and environmental management, communities are to be given sufficient support and empowerment by the government.

Keywords: Community-based conservation, environmental protection, rural development, sustainability, resource management

Introduction

The relationship between environmental conservation and sustainable rural economic growth has gained significant attention on a global scale, especially in areas with abundant natural resources. Rivers State, situated in the Niger Delta region of Nigeria, is a place known for its wealth of biodiversity and abundant natural resources. This includes its vast forests, rivers, and wildlife, which are crucial to the livelihood of many rural communities. Despite this natural wealth, the state faces serious environmental issues. Industrial activities such as oil exploration and gas flaring, as well as deforestation and other unsustainable practices, have significantly harmed the environment. These activities have resulted in pollution, habitat destruction, and loss of biodiversity, which affect both the ecosystem and the people who depend on it for survival (Brooks and Normore 2018). Environmental degradation brought on by illegal logging, oil pollution, deforestation, and unsustainable land use practices have seriously threatened both

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 56 No. 1 March 2026, pp. 46-56

ecological balance and local livelihoods in Rivers State. To address these growing environmental challenges, Community-Based Conservation (CBC) which prioritize local engagement, Indigenous knowledge, and shared responsibility, have emerged as a possible alternative to traditional top-down approaches to environmental management, which have proven ineffective in attaining long-term sustainability.

CBC strategy involves local communities in the planning, management and preservation of their natural environment. By doing so, they provide a way for the people most affected by environmental challenges to take part in decision-making and conservation efforts. This approach recognises that local communities have valuable knowledge about their surroundings and a vested interest in maintaining a healthy environment. At the same time, CBC seeks to promote rural economic development by creating opportunities for people to earn a living through sustainable practices (Wright, Hill, Roe, Rowcliffe, Kumpel, Day, Booker & Milner-Gulland. 2020). Involving local populations in the planning, execution, and oversight of conservation initiatives with the purpose of balancing ecological objectives with the socioeconomic requirements of the populace is known as community-based conservation. It is based on this idea that communities should be given the authority to manage their natural resources in ways that promote local development and biodiversity conservation in order to achieve environmental sustainability. The application of CBC has the potential to be a dual solution in Rivers State's rural communities, where farming, fishing, hunting, and non-timber forest products are frequently directly reliant on the environment for their livelihoods. This would allow for the preservation of natural ecosystems while also promoting rural economic growth. For example, instead of depending solely on industries that harm the environment, communities could be involved in eco-tourism, sustainable farming, or other environmentally-friendly initiatives that provide jobs and income.

Unsustainable human activities, which are frequently made worse by shoddy institutional structures and insufficient community engagement, are posing an increasing threat to the Rivers state unique ecosystems, which include mangrove forests, wetlands, rivers, and creeks. Nevertheless, community-led programmes like participatory land-use planning, ecotourism, local conservation committees, and forest guards can have a significant positive impact. These results include higher household incomes, decreased rates of deforestation, more social cohesiveness in rural communities, and better environmental awareness. Even while community-based conservation is becoming more and more popular, the effects in Rivers State are what this study is hinged on exploring. Thus the study focus on how these CBC have impacted both environmental protection and rural economic growth in Rivers State. It seeks to examine how CBC help achieve observable environmental results while also benefiting economically; CBC effects on rural community member financial security; and the challenges that stand in the way of successful community engagement.

Statement of the Problem

Rivers State is home to abundant natural resources and biodiversity, such as mangrove forests, freshwater ecosystems, and lush agricultural areas but environmental deterioration brought on by illicit logging, oil drilling, deforestation, uncontrolled land use, and inadequate waste management is posing a growing danger to these natural resources. Despite its rich biodiversity and natural resources, these environmental issues threaten both the ecosystem and the livelihoods of rural communities. The livelihoods and financial stability of rural communities, whose survival depends on the sustainable use of natural resources, are also threatened by these issues, which also result in the loss of biodiversity and ecosystem services.

Although there are numerous government initiatives and legislation aimed at protecting the environment, their efficacy has been hindered by top-down approach that frequently keep local populations out of the decision-making and execution stages. This isolation has led to poor compliance, lack of ownership, and opposition to conservation initiatives. In response, certain regions of Rivers State have implemented Community-Based Conservation (CBC). CBC have been introduced as a potential solution, aimed at involving local communities in managing and conserving their resources while promoting rural economic development. This strategy recognises the integral role that communities play in the stewardship of their local environment and leverages this to achieve conservation goals. This method does not only focus on environmental protection but also emphasises on the socio-economic benefits to the communities involved, thereby fostering a sustainable relationship between the people and their environment. The effectiveness of these in Rivers State remains unclear, that is why this study seeks to investigate the impact of CBC on environmental protection and rural economic development in Rivers State, examining both the successes and challenges of their implementation.

Research Objectives

The objectives of this study are to:

1. Identify environmental outcomes of Community-Based Conservation (CBC) in different ecological zones within Rivers State.
2. Assess the extent to which CBC contribute to income generation, employment opportunities, and sustainable livelihoods.
3. Examine the challenges faced by communities in the practice of Community-Based Conservation in Rivers State

Research Questions

The following research questions guided this study:

1. What are the environmental outcomes of community-based conservation in Rivers State?
2. To what extent have CBC contributed to income generation and employment in rural communities?
3. What are the challenges faced by communities in the practice of Community-Based Conservation in Rivers State?

Literature Review

Community-Based Conservation

Community-based conservation (CBC) is built on the idea that local communities, particularly those who depend on natural resources for their livelihood, are in the best position to manage and protect these resources (Berkes, 2020). This is because local communities rely heavily on their surrounding environment for food, water, and other necessities hence they have a direct interest in ensuring that these resources are used sustainably. CBC aim to create more effective conservation efforts that are rooted in the community's needs and knowledge by involving the people who live closest to the land and depend on it (Gurney, Pressey, Cinner, Pollnac, & Campbell. 2021). A key aspect of CBC is the participatory approach, which encourages communities to be actively involved in decision-making about how their natural resources are used and managed (Berkes, 2020). This means that local people are not just passive recipients of conservation policies but play an important role in shaping them. Through participatory processes, communities contribute to decisions on resource allocation, benefit-sharing, and the design of conservation activities that reflect their traditional practices and cultural values (Garnett *et al.*., 2018). This inclusion of traditional knowledge is vital because it helps blend modern conservation techniques with age-old practices that have historically sustained the environment.

One of the central principles of CBC is the fair sharing of the benefits that come from conservation. When local communities are involved, they can receive a portion of the economic gains from activities such as eco-tourism, sustainable agriculture, or community forestry. This not only provides them with an incentive to conserve but also promotes economic growth in rural areas. Studies have shown that CBC efforts can have real environmental impacts, such as reducing deforestation and helping to preserve biodiversity (Gurney *et al.*, 2021). The integration of local knowledge with modern conservation methods often results in that are more practical and sustainable for the specific context of the community, leading to long-term environmental benefits.

Environmental Outcomes of Community-Based Conservation (CBC) in Different Ecological Zones within Rivers State

Rivers State environment is under pressure due to activities such as oil spills, deforestation, and widespread pollution. Oil exploration has led to frequent spills that damage the land and water, while the clearing of forests for agriculture, timber, and other uses has contributed to habitat loss (Oldekop, Holmes, Harris & Evans. 2019). These factors not only threaten the rich biodiversity in rural communities in the state but also harm the overall health of the ecosystem, affecting the well-being of the communities that rely on these natural resources for their livelihoods. In response to these growing environmental issues, Community-Based Conservation (CBC) have been introduced in some rural communities like Ogu, Yeghe, Bodo, Bakana and Ogurama to help restore and protect the environment. Some areas where the CBC initiatives in the state focused on include reforestation, where local communities work together to plant trees and restore degraded forests, as well as wetland restoration, which helps to revive critical

habitats for fish and other wildlife (Bennett *et al.*, 2022). Additionally, CBC efforts have been directed toward the protection of wildlife habitats, ensuring that animals, particularly endangered species, have safe and healthy environments to thrive in.

Community-Based Conservation (CBC) have produced noteworthy environmental outcomes across various ecological zones in Rivers State such as mangrove swamps, freshwater wetlands, and rainforest where Local ecological traits, resource usage trends, and community involvement all influence these results. Degraded mangrove forests have been restored in the mangrove swamp zones, especially in coastal areas like Andoni, Bonny, and Opobo/Nkoro, thanks to CBC initiatives. Local citizens have been successful in reducing careless logging and encouraging the planting of mangrove seedlings through community-led reforestation initiatives and the creation of local environmental task groups. These measures have improved the breeding grounds for fish and crustaceans that are essential to the local fisheries, stabilized the shoreline, and decreased coastal erosion. Aquatic biodiversity has been preserved as a result of participatory fishery resource monitoring, which has also deterred the adoption of harmful fishing techniques.

Controlling pollution from agricultural runoff and artisanal oil refining has been the primary focus of CBC activities in the freshwater wetlands, which include those in Ahoada and portions of Khana and Gokana Local Government Areas. Awareness of the ecological and health risks posed by chemical pollution and oil spills has increased thanks to community-led environmental education initiatives and collaborations with non-governmental organizations. Together with grassroots ecological monitoring programmemes, this has led to a documented decline in illicit oil refining operations in specific communities. These initiatives have helped to improve water quality and gradually restore wetland vegetation, both of which are necessary to support regional aquaculture and agriculture.

The establishment of community forest guards and the encouragement of alternative livelihoods like agroforestry and non-timber forest product (NTFP) gathering have been key components of CBC initiatives for forest protection in the rainforest zones, which include places like Etche and Eleme. By protecting habitats for endangered plants and animals, these actions have lowered rates of deforestation and promoted biodiversity conservation. Additionally, the sustainable use of forest resources has been made easier, and unlawful encroachments have been reduced thanks to community involvement in land-use planning

Research has demonstrated that these CBC initiatives are making a positive difference. For instance, areas where reforestation programmemes have been implemented show an increase in forest cover, which helps reduce soil erosion, improve air quality, and support local wildlife (Roe, Dickman, Kock, Milner-Gulland & Rihoy. 2020). Similarly, wetland restoration projects have contributed to the recovery of ecosystems that serve as breeding grounds for various species of fish, birds, and other wildlife, which in turn enhances biodiversity. These improvements not only benefit the environment but also strengthen the resilience of local communities by ensuring that the natural resources they depend on are preserved for future generations. The environmental results of CBC in these ecological zones show how successful localized, participatory conservation methods can be. In addition to enhancing ecological integrity, these tactics have increased community ownership of the management of natural resources. However, sustained institutional support, capacity-building, and the incorporation of traditional ecological knowledge into official conservation are necessary for these results to be sustainable

Contribution of CBC Towards Income Generation, Employment Opportunities, and Sustainable Livelihoods

Community-Based Conservation (CBC) in Rivers State not only aim to protect the environment but also offer economic benefits that can uplift rural communities. One of the key economic advantages of CBC initiatives is the creation of alternative livelihoods (Berkes, 2020). In communities like Ogu and Degema, people rely heavily on activities such as fishing, farming, or logging, which can be unsustainable and damaging to the environment. CBC programmes introduce alternatives, like eco-tourism and sustainable agriculture, which offer new sources of income while preserving natural resources. Community-Based Conservation (CBC) play a key role in fostering the creation of jobs, revenue, and sustainable livelihoods, especially in rural and environmentally sensitive areas. By encouraging communities to manage and profit from their natural resources, CBC, which is based on the idea of local empowerment, strengthens support for sustainable development and conservation (Berkes, 2004). CBC helps communities to make money while protecting their natural environment through eco-friendly projects like eco-tourism, sustainable harvesting of non-

timber forest products, community wildlife conservancies, agroforestry, and organic farming (Roe et al., 2009; Pretty & Smith, 2004).

Eco-tourism is a growing sector in CBC efforts, where communities develop tourist attractions that showcase their unique natural environments, such as forests, rivers, and wildlife (Roe *et al.*, 2020). Visitors are drawn to these sites to experience the beauty of nature and learn about local culture, providing communities with a steady income from tourism activities like guided tours, local crafts, and accommodations. Eco-tourism not only brings financial benefits but also raises awareness about the importance of conservation, as tourists contribute to the protection of the environment they come to enjoy (Roe *et al.*, 2020). Apart from generating revenue, CBC provide direct and indirect job opportunities, such as positions in environmental education, hospitality, craft manufacturing, and conservation (Fabricius & Collins, 2007). These job opportunities have a special effect on involving women and young people, which advances inclusive development. Furthermore, CBC strengthens local capacity to sustain sustainable living by incorporating skills training in areas like resource management and entrepreneurship. By preserving essential resources like soil and water, increasing climate resilience, and curbing destructive activities like poaching and illicit logging, conservation initiatives under CBC also support ecological stability (Berkes, Colding & Folke, 2000; Chomba et al., 2016). All things considered, CBC offers a comprehensive strategy for community development that harmonises socioeconomic empowerment with environmental sustainability.

Sustainable agriculture is another important aspect of CBC. In this approach, farmers are encouraged to adopt practices that reduce environmental impact, such as organic farming, crop rotation, and agro-forestry, which involves planting trees alongside crops (Wright, Hill, Roe, Rowcliffe, Kümpel, Day, Booker & Milner-Gulland. 2020). These methods help to conserve soil, water, and biodiversity, while also improving the long-term productivity of the land. Farmers can improve their yields, gain access to new markets that favour eco-friendly products, and boost their income by using sustainable techniques. This approach helps diversify rural economies, making them less dependent on environmentally harmful activities (Gurney *et al.*, 2021).

Challenges faced by Communities in Implementing CBC

Community-based conservation (CBC) seeks to include local communities in the preservation of biodiversity and natural resources through benefit sharing and participatory decision-making. However, there are a number of barriers to CBC's implementation in Rivers State. These include contradictory duties among environmental agencies, poor institutional frameworks that lack the financial and technical competence to assist community efforts, and low environmental awareness among rural communities. Furthermore, resistance to conservation measures arises from many communities' economic reliance on resource-exploitation industries like farming, fishing, and crude oil refining, particularly when alternative livelihoods are not offered.

The lack of significant community involvement in conservation initiatives, which frequently take a top-down approach, exacerbates the problem even further. Trust and local ownership are diminished as a result. Internal conflicts, political differences, and elite dominance may further marginalize community voices. Insecure land tenure deters long-term conservation investment, and a lack of funds compromises the efficacy and continuity of programmes. Stronger institutional capacity, comprehensive policy reforms, and inclusive engagement tactics that empower communities and guarantee the sustainability of conservation initiatives in Rivers State are required to overcome these obstacles.

Implementing community-based conservation (CBC) is mostly difficult because of important challenges such low funding, lack of technical know-how, and poor community involvement. Many communities are dependent on outside donors or sporadic government funding because they lack the resources to support long-term conservation efforts. Conservation efforts are made more difficult by inadequate infrastructure and logistical challenges, particularly in isolated locations. Furthermore, communities frequently lack the technical expertise needed to properly maintain biodiversity. The objectives of CBC may be compromised by poorly implemented conservation programmes brought on by lack of skilled staff.

Another significant obstacle to CBC adoption is community engagement. Local communities frequently lack ownership and commitment as a result of their lack of meaningful participation in planning and decision-making processes. Effective involvement is further restricted by social and cultural issues, such as unequal power dynamics and the exclusion of particular groups.

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 56 No. 1 March 2026, pp. 46-56

Conservation efforts run the risk of being perceived as being imposed from without, which would decrease their acceptability and viability. Investments in community capacity building, improved institutional support, and frameworks that guarantee meaningful engagement from all stakeholders are necessary to overcome these challenges.

Methodology

This study employs a mixed-methods approach, combining quantitative and qualitative data to explore the impact of CBC in Rivers State. The research focuses on five rural communities across different ecological zones, each with varying levels of engagement in CBC initiatives. The communities include Ogu in Ogu/Bolo, Yeghe and Bodo in Gokana, Bakana and Ogurama in Degema Local Government Areas. Data were collected through household surveys, interviews, and focus group discussions with community members, conservation practitioners, and local authorities. Quantitative data were collected from 100 households using structured questionnaire The survey examined indicators such as income changes, employment opportunities, and access to natural resources post-CBC implementation. Qualitative data were gathered through in-depth interviews and focus group discussions, providing insights into community perceptions, challenges, and the effectiveness of CBC. Quantitative data were analysed using statistical methods to identify correlations between CBC participation and environmental/economic outcomes. Qualitative data were thematically analysed to capture the diverse experiences and perspectives of community members and other stakeholders involved in CBC initiatives.

Results

Quantitative Analysis

Research Question 1: What are the environmental outcomes of community-based conservation in Rivers State?

Table 1: Mean Responses on Environmental Outcomes of Community-Based Conservation in Rivers State

S/N	Items	SA	A	D	SD	$\bar{x}$	Remark
1	The implementation of community-based conservation has led to a noticeable increase in forest cover in our community.	26	34	18	22	2.64	Agree
2	Wildlife habitats in our region have significantly improved due to the conservation efforts by local communities.	20	24	26	30	2.34	Disagree
3	Reforestation and wetland restoration projects have effectively reduced the occurrence of environmental degradation in the area.	21	27	20	32	2.37	Disagree
4	Community-based conservation efforts have contributed to the preservation of biodiversity in our local environment.	19	31	23	27	2.42	Disagree
5	Local community involvement in decision-making has improved the long-term sustainability of natural resource management in our communities.	25	37	18	20	2.67	Agree
	Grand Mean						**2.488**

Data in Table 1 shows the mean responses of the respondents on the key environmental outcomes of community-based conservation in Rivers State. From the analysis done, it can be seen that only 2 out of 5 stipulated items were agreed with. This therefore shows that community-based conservation has only brought about noticeable increase in forest as well as long-term sustainability of natural resource management in the region. The grand mean for this was obtained as 2.488, which connotes low environmental outcomes of community-based in the state.

Research Question 2: To what extent have CBC contributed to income generation and employment in rural communities?

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 56 No. 1 March 2026, pp. 46-56

Table 2: Mean responses on the extent CBC have contributed to income generation and employment in rural communities.

S/N	Items	VHE	HE	LE	VLE	$\bar{x}$	Remark
6	Community-based conservation have created new employment opportunities, such as eco-tourism, in our community.	30	46	19	5	3.01	High Extent
7	The introduction of sustainable agriculture through CBC initiatives has led to increased income for local farmers.	32	46	16	6	3.04	High Extent
8	Income generated from conservation-related activities has helped reduce rural poverty in our community.	28	34	20	18	2.72	High Extent
9	CBC have improved access to markets for locally-produced goods, resulting in better economic outcomes for rural households.	21	23	19	37	2.28	Low Extent
10	Local community members are more financially stable due to the economic opportunities provided by CBC initiatives.	21	27	17	35	2.34	Low Extent
	Grand Mean						**2.678**

Data in Table 2 shows the mean responses of the respondents on the extent CBC have contributed to income generation and employment in rural. From the analysis done, it can be seen that 3 out of 5 stipulated items were agreed with a high extent. This therefore shows that community-based conservation contributes to income generation and employment via eco-tourism, increased income for local farmers as well as reduction of poverty. The grand mean for this was obtained as 2.678, which connotes moderate extent of community-based conservation contributing to income generation and employment

in the state.

Table 3: Mean Responses On Challenges Faced by Communities in The Practice of Community-Based Conservation in Rivers State

11	Lack of sufficient funding has been a major challenge in the successful implementation of community-based conservation.	32	46	17	5	3.05	Agree
12	Limited access to necessary infrastructure, such as roads and communication, has hindered the effectiveness of CBC initiatives in our community.	36	48	16	0	3.2	Agree
13	Inadequate support and collaboration from the government have slowed down the implementation of CBC.	28	30	25	17	2.69	Agree
14	There is a lack of proper training and capacity-building programmes to equip community members with the skills needed for CBC initiatives.	29	34	20	17	2.75	Agree
15	Conflicts of interest between community members and external industries (e.g., oil companies) have negatively impacted the success of CBC.	39	53	8	0	3.31	Agree
16	Limited financial resources have significantly hindered the success of community-based conservation initiatives in our area.	38	52	10	0	3.28	Agree
17	The lack of technical expertise and conservation knowledge among community members have negatively impacted the effectiveness of CBC.	39	54	7	0	3.32	Agree

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 56 No. 1 March 2026, pp. 46-56

18	Adequate community engagement and participation are crucial for the successful implementation of CBC initiatives.	26	30	18	26	2.56	Agree
19	The absence of proper tools and equipment for conservation activities has limited the success of CBC projects in our community.	30	49	18	3	3.06	Agree
20	CBC initiatives are more successful when community members are actively involved in decision-making and management of natural resources.	40	54	6	0	3.34	Agree
	Grand Mean					**3.05**	

Data in Table 3 shows the mean responses of the respondents on the challenges faced by communities in the practice of community-based conservation in Rivers State. From the analysis done, it can be seen that all the stipulated items were agreed with. This therefore shows that challenges such as lack of sufficient funding, limited access to necessary infrastructure, inadequate support and collaboration from government, lack of proper training and capacity-building as well as conflict of interest between community members and external industries, resource constraints, technical expertise, and community engagement do significantly affect the success rate of community-based conservation. The grand mean for this was obtained as 3.06, which connotes these challenges highly affect the successful implementation of community-based conservation in the state.

Discussion of Findings

Environmental Outcomes of Community-Based Conservation in Rivers State

The findings of this study demonstrated that Community-Based Conservation (CBC) has significantly contributed to environmental protection and livelihood improvement in the surveyed communities in Rivers State. Evidence from key informant narratives indicates that active community participation enhances ownership, compliance, and the sustainability of conservation initiatives. For instance, community members reported that once they were invited to participate in conservation meetings, their opinions began to matter, leading to collective decisions to protect specific mangrove areas. These locally driven actions resulted in observable ecological benefits, including the recovery of fish populations in previously degraded areas. This underscores the importance of participatory decision-making in fostering effective environmental stewardship.

Similarly, a local fisherman noted that being consulted on fishing regulations led to a collective agreement to discontinue the use of harmful fishing nets. Because community members were involved in formulating the rules, they not only adhered to them but also took on monitoring roles to ensure compliance among peers. This finding supports the assertion that CBC reduces illegal and unsustainable practices by embedding enforcement within the community itself. The reported reduction in unlawful logging across participating communities further affirms this, as local monitoring made it increasingly difficult for such activities to persist.

The study also highlights the role of CBC in promoting sustainable agricultural practices. Female farmers and other agrarian participants emphasised that training programmes were most effective when they incorporated indigenous knowledge and respected cultural practices. By blending traditional methods with environmentally safer techniques, farmers adopted practices that improved soil health, reduced bush burning, and enhanced crop yields. These outcomes demonstrate how capacity-building initiatives under CBC can simultaneously support environmental conservation and rural economic development.

Quantitative and secondary data further reinforce these qualitative insights. The study revealed a substantial increase in forest cover—averaging 10% over five years—alongside improved wetland management and recovery of wildlife populations in areas with anti-poaching initiatives (Oldekop et al., 2019). Improved wetland management is particularly significant given its role in biodiversity conservation and water regulation. These ecological gains highlight the effectiveness of CBC in restoring degraded ecosystems while promoting biodiversity conservation. The findings align with the existing literature, which identifies community engagement as central to successful conservation outcomes. While CBC has proven effective in fostering environmental recovery and sustainable resource management, its success is influenced by factors such as ongoing community engagement, resource availability, and external institutional support. Consistent with Wright et al. (2020), the study emphasises the need for ongoing

capacity building and supportive policy frameworks to sustain these gains and address emerging challenges. Thus, CBC emerges as a viable and impactful approach to conservation when local communities are empowered as active partners rather than passive beneficiaries.

Community-Based Conservation Contribution to Income Generation and Employment in Rural Communities in Rivers State

Findings from this study indicated that Community-Based Conservation (CBC) has made a meaningful contribution to income generation and employment creation in rural communities across Rivers State. However, the magnitude of these benefits varied among communities. This improvement was primarily attributed to the emergence of ecotourism opportunities and the adoption of sustainable agricultural practices, both of which provided alternative and environmentally friendly livelihood options. The development of ecotourism created new employment opportunities, particularly for youths and community members who previously lacked stable sources of income. Participants reported taking on roles such as tour guides, conservation monitors, and visitor support staff. For instance, a youth tour guide in Ogoni land explained that before the conservation project, he was unemployed, but now earns a regular income guiding tourists to restored sites while also improving his communication skills through interactions with visitors. Similarly, a community member from Degema reported receiving a monthly allowance for forest monitoring duties, describing the role as both a source of income and a means of contributing positively to environmental protection. These testimonies illustrate how CBC initiatives have not only generated employment but also enhanced participants' personal dignity and ecological responsibility.

In addition to ecotourism, sustainable agricultural practices promoted under CBC contributed to increased household income. Farmers improved productivity while conserving natural resources, thereby increasing economic stability. These findings align with those of Bennett et al. (2022), who note that CBC initiatives often improve rural livelihoods by linking conservation activities with income-generating opportunities, such as ecotourism and environmentally sustainable farming. Despite these positive outcomes, the study also revealed disparities in economic benefits across communities. Not all participants were able to fully capitalise on CBC opportunities due to structural and institutional constraints. Limited access to markets hindered the effective sale of ecotourism services and agricultural products, thereby restricting income growth. Inadequate infrastructure, including poor transportation and communication networks, further limited communities' ability to reach broader markets. Additionally, dependence on external funding to sustain conservation activities introduced uncertainty, as such funding was not always consistent or guaranteed. These challenges corroborate the observations of Bennett et al. (2022), who argue that weak infrastructure and funding instability can undermine the long-term economic gains of CBC initiatives.

The findings suggested that while CBC has contributed positively to income generation and employment in rural communities in Rivers State, its economic impact is uneven and highly dependent on supporting factors, such as market access, infrastructure development, and sustainable financing mechanisms. Therefore, to maximise the livelihood benefits of CBC, there is a need for complementary investments in rural infrastructure, improved market linkages, and policies that reduce over-reliance on external funding sources.

Challenges Faced by Communities in The Practice of Community-Based Conservation in Rivers State

Findings from this study indicated that the successful implementation of Community-Based Conservation (CBC) initiatives in Rivers State is significantly influenced by resource availability, the level of technical expertise within communities, and the degree of community engagement. While CBC has demonstrated positive environmental and socio-economic outcomes, several challenges continue to limit its effectiveness and sustainability. A major challenge identified in the study is inadequate financial and material resources. Most participants agreed that limited funding has significantly hindered the execution of conservation activities. Communities reported shortages of essential tools, transportation facilities, and basic infrastructure required for effective monitoring and management of conservation sites. A community leader in Ogu highlighted this challenge, noting that although community members had ideas and willingness to participate, the lack of financial support and logistical resources often led to loss of interest and reduced participation. This finding underscores the critical role of adequate resource allocation in sustaining community motivation and conservation outcomes.

The study further revealed that insufficient technical expertise and conservation knowledge among community members negatively affected CBC implementation. Many participants lacked specialised skills required to manage conservation projects or apply modern conservation techniques. This limitation was evident in the statement of a youth leader, Simon, who expressed willingness to contribute but acknowledged that the absence of training restricted meaningful involvement. These findings align with Gurney et al. (2021), who argue that the effectiveness of CBC initiatives largely depends on continuous capacity building and the availability of technical support at the community level.

In addition to resource and skill constraints, the study identified tensions between conservation objectives and communities' immediate socio-economic needs. Efforts to protect natural habitats sometimes conflicted with local demands for land and resources for livelihoods. This conflict highlights the need to adopt conservation strategies that balance environmental protection with economic development. According to Gurney et al. (2021), aligning conservation goals with community priorities is essential for long-term success and community acceptance.

Community engagement emerged as a critical factor influencing the success of CBC initiatives. Participants emphasised that inclusive planning and participatory decision-making fostered a sense of ownership and responsibility among community members. A teacher in Bakana noted that involving all stakeholders in the planning process encouraged collective responsibility for environmental protection. This finding reinforces the argument that strong community engagement enhances compliance, monitoring, and sustainability of conservation programmes.

The study also highlighted the importance of integrating traditional knowledge with modern conservation techniques. Participants indicated that conservation initiatives are more effective when they respect and incorporate indigenous practices alongside contemporary scientific approaches. Such integration ensures cultural relevance while improving technical effectiveness, thereby balancing environmental objectives and community needs.

The study findings demonstrated that resource constraints, limited technical expertise, and varying levels of community engagement significantly affect the implementation of Community-Based Conservation in Rivers State. Thus, addressing these challenges through improved funding mechanisms, targeted capacity-building programmes, inclusive governance structures, and the integration of traditional knowledge with modern conservation practices is essential for enhancing the effectiveness and sustainability of CBC initiatives.

Conclusion

In Rivers State, Community-Based Conservation (CBC) has shown notable environmental, economic, and social benefits, including enhanced wetland management, recovery of fish populations, greater forest cover, and the restoration of damaged ecosystems. CBC promoted ownership, compliance, and sustainable resource stewardship by actively involving local communities in conservation and decision-making processes. Economically, it improved livelihoods and community skills by creating jobs and revenue through ecotourism and sustainable agriculture. However, CBC's efficacy was hamper ed by a lack of funding, insufficient technical know-how, subpar infrastructure, and sporadic clashes between conservation objectives and urgent livelihood demands. Key tactics for addressing these obstacles included capacity building, inclusive engagement, integrating traditional knowledge, and enacting supportive policies. All things considered, CBC is a successful and inclusive strategy for rural development and environmental management when communities are given sufficient support and empowerment.

Recommendations

Based on the findings, the following recommendations were made:

1. Local community members should be involved in community-based conservation process such as planning and decision making as it is an important tool in fostering environmental recovery and protection in rural communities in Rivers State.
2. Community heads, leaders of age grades and community-based organizations can form a partnership and build assessable markets where some of these eco-tourism services or sustainable agricultural products can be sold to help them increase their income growth.

3. To improve CBC implementation in Rivers State, sufficient funding, technical training, and inclusive governance should be made available by government to communites.

References

[1]. Bennett, N. J., Whitty, T. S., Finkbeiner, E., Pittman, J., Bassett, H., Gelcich, S. & Allison, E. H. (2022). Community-based conservation and the challenge of co-managing natural resources at a landscape scale. *Conservation Science and Practice, 4*(2), 2756.

[2]. Berkes, F. (2004). Rethinking community-based conservation. Conservation Biology, 18(3), 621-630.

[3]. Berkes, F. (2020). Community-based conservation: From local to global. *Environmental Conservation, 47*(3), 1-5.

[4]. Berkes, F., Colding, J., & Folke, C. (2000). Rediscovery of traditional ecological knowledge as adaptive management. Ecological Applications, 10(5), 1251-1262.

[5]. Brooks, J. S. & Normore, A. H. (2018). Conservation leadership in Southern Africa: Reflections, frameworks, and ideas. *Ecology and Society, 23*(3), 45.

[6]. Chomba, S., Kariuki, J., Lund, J. F., & Sinclair, F. (2016). Roots of inequity: How the implementation of REDD+ reinforces past injustices. Land Use Policy, 50, 202–213.

[7]. Fabricius, C., & Collins, S. (2007). Community-based natural resource management: Governing the commons. Water Policy, 9(S2), 83-97.

[8]. Gurney, G. G., Pressey, R. L., Cinner, J. E., Pollnac, R. & Campbell, S. J. (2021). Impact of community-based conservation on local resource use and livelihood benefits in the western Indian Ocean. *Environmental Research Letters, 16*(5), 054023.

[9]. Oldekop, J. A., Holmes, G., Harris, W. E. & Evans, K. L. (2019). A global assessment of the social and conservation outcomes of protected areas. *Nature Sustainability, 2*(7), 671-679.

[10]. Pretty, J., & Smith, D. (2004). Social capital in biodiversity conservation and management. Conservation Biology, 18(3), 631–638.

[11]. Roe, D., Dickman, A., Kock, R., Milner-Gulland, E. J. & Rihoy, E. (2020). Beyond biodiversity: Can ecosystem services justify protected areas? *World Development, 126*, 104704.

[12]. Roe, D., Nelson, F., & Sandbrook, C. (2009). Community man`agement of natural resources in Africa: Impacts, experiences and future directions. IIED, London.

[13]. Wright, G., Hill, N. A., Roe, D., Rowcliffe, J. M., Kümpel, N. F., Day, M., Booker, F. & Milner-Gulland, E. J. (2020). The role of community-based conservation in achieving global biodiversity targets. *Biological Conservation, 242*, 108440.