

Community-Led Biodiversity Management for Climate Resilience and Adaptation



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INTRODUCTION

- ✓ Climate change is one of the global challenges in this 21st century and has contributed to adverse impacts on biodiversity, ecosystem services and human livelihoods.
- ✓ In the sub-Saharan Africa, like Nigeria climate variability intersects with environmental degradation, deforestation and biodiversity loss, worsening issues of social and ecological vulnerability (IPCC. 2022).
- ✓ Indigenous communities adopt ecological knowledge systems to sustain their environments and adapt to climatic shifts.



Objectives

- This research investigated how community-led biodiversity management, rooted in Indigenous Ecological Knowledge (IEK),
- local governance and
- ecological ethics have contributed to climate resilience and adaptation in Southern Nigeria.

Research Gap

- The research seeks to bridge indigenous knowledge with contemporary conservation science and environmental policy for sustainable climate action.

Research question

- What role does IEK, local governance and ecological ethics play in climate resilience and adaptation ?

Methodology

- ✓ The research employed a mixed-methods approach combining participatory fieldwork, ethnographic observation, and ecological assessment.
- ✓ Four indigenous communities across selected states in the Southern Nigeria were purposively selected based on their reliance on natural ecosystems for livelihoods.
- ✓ The communities were, Abia state: (Ariam elu elu, Olokoro, Ohafia),
- ✓ Anambra(Aguleri, Achina , Igbariam, Innoma ,
- ✓ Enugu: (Amoli, Agbogugu, Ugwogo, Umunevo), Rivers (Isiokpor, Ubima, Gokana, Ozuzu).



Plate 1. 0 Community Focus Group Discussion (FGD) and Ethnographic observation

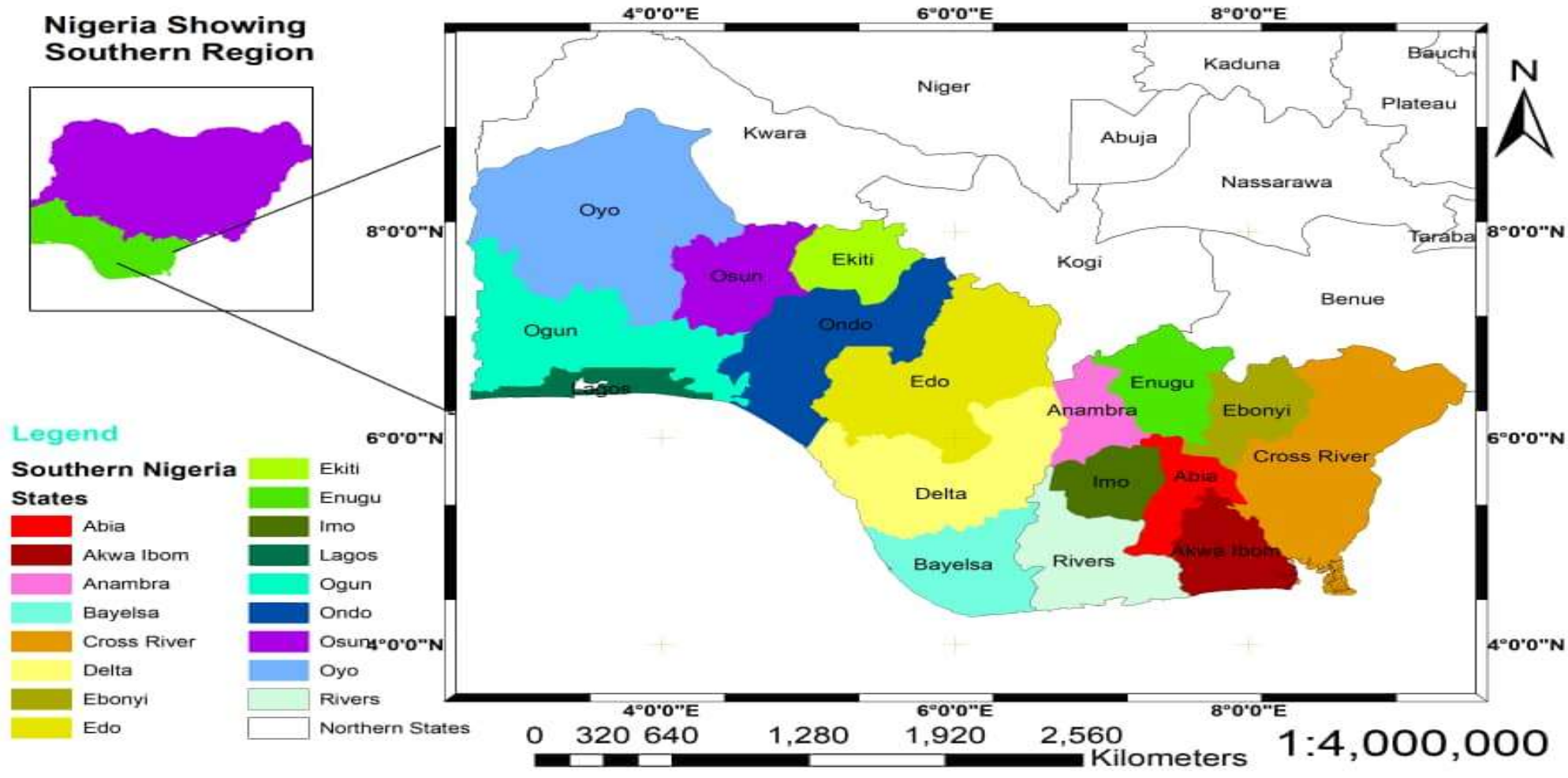


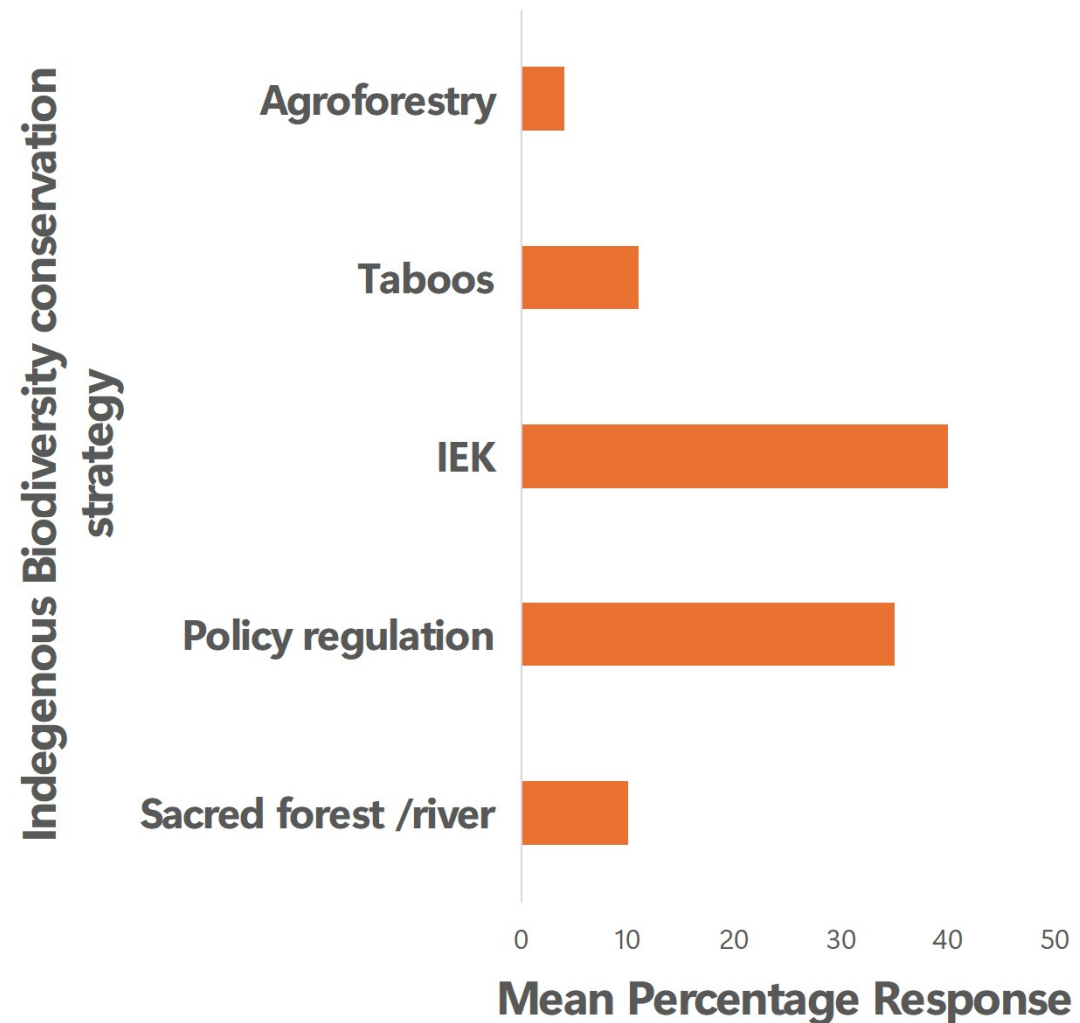
Fig. 1. Map of Southern Nigeria

Data Collection Methods

- ✓ Participatory Rural Appraisal (PRA): Engaged elders, farmers and traditional leaders in focus group discussions.
- ✓ Ethnographic Observation: Recorded local conservation rituals, land-use patterns and seasonal practices.
- ✓ Ecological Assessment: Measured species diversity in community-managed forests and wetlands. Interviews:
- ✓ Conducted structured interviews with policymakers, NGOs, and conservation officers.
- ✓ Data were analyzed using thematic content analysis for qualitative insights and biodiversity indices (Shannon-Weiner Index) for ecological diversity. Shannon $H = -\sum p_i \ln p_i$, Where H = Shannon's index, $\ln p_i$ = is the proportion of individuals belonging to species i

Results and Discussion

- ✓ Findings from the research revealed that IEK functions as an informal and yet structured environmental governance system.
- ✓ Traditional conservation measures such as sacred groves, taboos on hunting certain species, and rotational farming conserve biodiversity effectively.
- ✓ These practices contribute to maintaining ecological balance and enhancing resilience to climate variability.
- ✓ The Taboos in communities contributed significantly to protecting key plant species such as Iroko (*Milicia excelsa*) and African mahogany (*Khaya senegalensis*).
- ✓ Sacred groves acted as biodiversity reservoirs which contributes to local ecological resilience.



Results and Discussion cont'd

- ❖ The collective management of resources facilitated by social cohesion and local governance institutions played a crucial role in mobilizing community action, spreading knowledge, and enforcing conservation norms (Fig.2).
- ❖ Collective decision-making through village councils and age-grade systems ensured compliance with ecological norms.
- ❖ Some women's groups played key roles in resource stewardship, particularly in medicinal plant conservation and utilization.

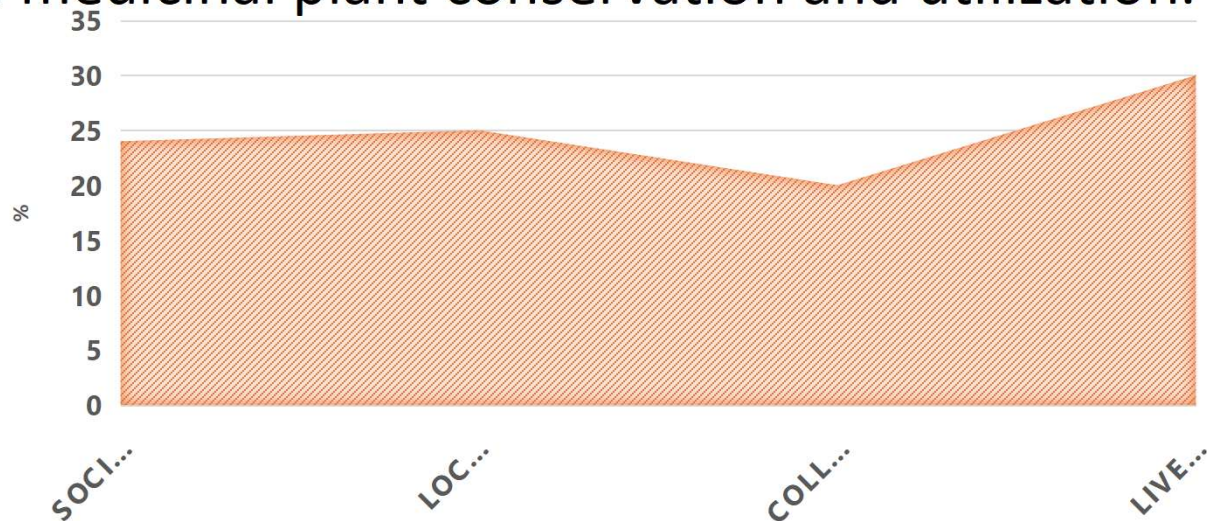



Fig. 2 Community-led conservation strategies

Threats to Indigenous Systems

- ❖ cultural erosion, urban migration, and exclusion from national policy discourse.
 - ❖ Government conservation programs often ignore traditional custodianship which ultimately weakens local enforcement mechanisms.
 - ❖ These factors diminish the potential of traditional systems in addressing environmental challenges.
 - ❖ The isolation of indigenous voices from formal conservation and climate policy spaces erodes the scalability and sustainability of community-led initiatives.
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Recommendations

To strengthen community biodiversity management, the research recommends:

1. Integration of indigenous ecological principles into formal environmental policies and impact assessments.
2. Institutionalize community conservation areas within Nigeria's Environmental Impact Assessment (EIA) framework.
3. To train local custodians and government officers on participatory biodiversity monitoring.
4. To create databases and oral archives to preserve traditional ecological practices for future generations.
5. Promote management frameworks between communities, NGOs and state institutions.

Conclusion

The biodiversity management is anchored on indigenous ecological wisdom which offers a multidimensional solution to the climate crisis, ecological, socio-cultural and economic. This strategy empowers communities to be part of the management framework of biodiversity resources which enhances resilience and strengthens environmental governance which ultimately bridges the gap between traditional knowledge and modern conservation policy.

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Let's continue the conversation!

Message me your questions or comments in the IAIA26 app.

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