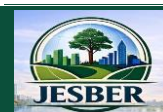


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## Research article

### CONSERVATION AS AN ENVIRONMENTAL MANAGEMENT STRATEGY: GOVERNANCE, MONITORING AND ACCOUNTABILITY FRAMEWORKS FOR ECOTOURISM DESTINATIONS IN CROSS RIVER STATE, NIGERIA

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#### ABSTRACT

Public discussion of conservation in tourism has so far been dominated by a marketing framing, in which disclosure is valued chiefly for its capacity to build consumer trust and brand equity. This paper reframes conservation as, first and foremost, an environmental management problem: a question of institutional governance, monitoring and evaluation design, and financial accountability, of which visitor-facing marketing communication is only the final, outward-facing layer. Drawing on an institutional document review of protected-area management instruments applicable to Cross River State together with a structured survey of 61 environmental management officers, park rangers and conservation-fund administrators across three protected and community-managed ecotourism sites, the study develops and tests a Plan-Disclose-Monitor-Verify-Adapt (PDMVA) transparency-management cycle. Findings indicate that formal environmental management system (EMS) adoption remains low across the sampled sites, that conservation-fund reporting is rarely subjected to independent verification, and that monitoring indicators used internally are seldom translated into a form usable for public accountability. The paper argues that credible visitor-facing disclosure of the kind increasingly demanded by ecotourism markets cannot be sustained without an underlying environmental management architecture capable of generating verifiable data in the first place, and it proposes an institutional roadmap, anchored in Nigeria's existing environmental regulatory framework, for closing this gap.

#### KEYWORDS

Environmental management systems, conservation, protected area governance, monitoring and evaluation, conservation finance accountability, Cross River State

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## 1. INTRODUCTION

Recent scholarship on ecotourism marketing has argued persuasively that destinations which openly disclose ecological vulnerabilities, conservation financing and monitoring data build stronger visitor trust than those relying on idealised, aesthetic promotion (Tasci, Croes & Villanueva, 2021). This literature, however, has approached transparency primarily as a communication strategy directed outward at consumers, with comparatively little attention paid to the institutional and environmental management infrastructure required to generate the data being disclosed in the first place. A destination cannot publish a credible, verifiable forest-cover monitoring dashboard if it possesses no monitoring programme; it cannot itemise conservation-fund allocation if its financial records are not structured to permit such itemisation; and it cannot claim adaptive management in response to disclosed setbacks if no institutional mechanism exists to translate monitoring findings into management action.

This paper argues that conservation is, at its foundation, an environmental management challenge before it is a marketing one. Environmental management, understood as the systematic planning, monitoring, evaluation and adaptive control of an organisation's interaction with its ecological environment (International Organization for Standardization [ISO], 2015), supplies the institutional machinery, environmental management systems (EMS), monitoring and evaluation (M&E) frameworks, and financial audit protocols, without which visitor-facing disclosure would amount to unverifiable assertion rather than credible signal. Nigeria's ecotourism sector, and Cross River State's protected-area and community-managed sites in particular, offer an instructive setting in which to examine this gap, given the state's dual profile as both a globally recognised biodiversity hotspot, anchored by the Cross River National Park and its lowland and montane rainforest reserves, and a jurisdiction where environmental governance capacity remains uneven across institutions (Eneyo, Ushie, Akeh, Udonwa,

Esuabana, Idika, Itu & Antai, 2022; Iwara, Abua, Udonwa, Esuabana, Archibong, Idika, Bassey, Antai, Egbai & Eneyo, 2023).

The paper pursues three linked objectives. First, it develops a conceptual Plan-Disclose-Monitor-Verify-Adapt (PDMVA) cycle that positions visitor-facing transparency as the output of an underlying environmental management process rather than a stand-alone communication tactic. Second, it applies this framework empirically to assess the current state of environmental management system adoption, monitoring practice and financial accountability across three Cross River State ecotourism sites. Third, it translates the findings into an institutional roadmap that links Nigeria's existing environmental regulatory architecture, including the mandate of the National Environmental Standards and Regulations Enforcement Agency (NESREA) and the Environmental Impact Assessment Act, to the specific accountability requirements of ecotourism conservation financing.

The distinction proposed here is not intended to displace the marketing-oriented -conservation literature but to complement it by identifying the upstream conditions under which its recommendations become feasible. A destination marketing organisation can be persuaded, relatively quickly, of the commercial case for publishing a conservation-funding dashboard; persuading it is a wholly different undertaking from equipping the underlying site management authority with the accounting systems, monitoring protocols and verification arrangements needed to populate that dashboard with data that would survive scrutiny. This paper is concerned principally with the latter undertaking, treating it as the necessary institutional groundwork on which credible marketing-facing transparency initiatives must ultimately be built.

The distinction matters practically as well as conceptually. Where marketing scholarship treats disclosure failure primarily as a lost commercial opportunity, an environmental management perspective treats it as a governance failure with direct consequences for the ecological integrity of the resource base on which the tourism sector ultimately depends. A protected area that cannot verify its own biodiversity monitoring data is not merely missing a marketing opportunity; it is unable to demonstrate, to funders, regulators or its own management board, whether its conservation mandate is being met at all. Positioning conservation within environmental management practice therefore broadens the set of institutions with a legitimate stake in closing the transparency gap, from tourism marketing departments alone to include environmental regulators, protected-area management authorities, conservation-fund trustees and the academic environmental management community.

## 2. CONCEPTUAL AND THEORETICAL FRAMEWORK

These four theoretical strands are complementary rather than competing. Cognitive and behavioural accounts of why visitors respond positively to disclosure, as developed in the parallel marketing literature, explain the demand side of conservation; the environmental management, principal-agent, adaptive co-management and legitimacy perspectives developed in this section explain the supply side, namely why and how an institution comes to generate credible, disclosable data in the first place. The PDMVA framework introduced below integrates both sides into a single operational cycle.

### 2.1 Environmental Management Systems and the Plan-Do-Check-Act Cycle

The ISO 14001 environmental management system standard formalises environmental governance around a Plan-Do-Check-Act (PDCA) cycle: an organisation plans environmental objectives, implements them, checks performance against monitoring data, and acts to correct deviations (International Organization for Standardization [ISO], 2015). Applied to ecotourism, this cycle implies that a destination's conservation claims should originate from a documented management plan with measurable indicators, be supported by routine monitoring against those indicators, and feed into a demonstrable adaptive-management response when monitoring reveals shortfalls. The present study extends this logic into a Plan-Disclose-Monitor-Verify-Adapt (PDMVA) cycle, in which a fifth stage, public disclosure, is inserted between planning and monitoring to make explicit that a management commitment, once made, should be stated publicly before performance against it is checked, and a sixth element, independent verification, is added to distinguish self-reported claims from externally validated ones (Delmas & Montes-Sancho, 2020).

## 2.2 Principal-Agent Theory and Conservation-Fund Accountability

Principal-Agent Theory offers a second conceptual anchor. Where visitors, donors or government regulators (principals) delegate conservation financing to a destination management authority or private operator (agent), information asymmetry between the two creates the possibility that funds are diverted or under-reported without the principal's knowledge (Vatn, 2020). Robust environmental management counters this risk through independent financial audit, ring-fenced conservation accounts and published expenditure reporting, mechanisms that reduce the agent's capacity to misrepresent performance and that are conceptually distinct from, though a precondition for, the marketing-facing financial dashboards described in the -conservation marketing literature (Tasci et al., 2021).

## 2.3 Adaptive Co-Management and Institutional Capacity

Adaptive co-management theory, which describes environmental governance as an iterative process of learning shared between state agencies, private operators and local communities (Armitage, Berkes & Doubleday, 2021), supplies the third conceptual anchor. It highlights that the institutional capacity to act on monitoring data, staffing, budget, technical skill and inter-agency coordination, is itself a determinant of whether transparency can be sustained over time, rather than treating transparency as a one-time disclosure event. A protected area with strong community co-management arrangements is theorised to sustain accountability more consistently than one relying solely on a single, potentially under-resourced management authority.

## 2.4 Legitimacy Theory and Institutional Signalling

A fourth conceptual lens, legitimacy theory, holds that organisations disclose information partly to maintain a perceived congruence between their operations and the expectations of the wider society within which they are embedded (Suchman, 2020). For a state park authority or forestry commission, legitimacy pressure arises not only from tourists but from central government budget overseers, international conservation donors and, increasingly, host communities asserting customary claims over forest resources. Environmental management transparency, in this reading, functions simultaneously as a tool for maintaining institutional legitimacy across several audiences at once, which helps explain why disclosure practice, once established for one audience such as a donor reporting requirement, often diffuses into other reporting channels including visitor-facing communication, a pattern the PDMVA framework's Disclose stage is designed to capture regardless of which audience originally prompted it.

## 3. INSTITUTIONAL AND REGULATORY CONTEXT IN NIGERIA

Nigeria's environmental regulatory architecture provides several instruments potentially relevant to ecotourism transparency, although these instruments were not originally designed with tourism disclosure in mind. The National Environmental Standards and Regulations Enforcement Agency (NESREA) Act empowers the agency to enforce environmental standards and could, in principle, be extended to audit conservation-financing claims made by tourism operators. The Environmental Impact Assessment (EIA) Act mandates environmental assessment for development projects, including some tourism infrastructure, but does not currently require ongoing public reporting once a project is operational. At the state level, the Cross River State Forestry Commission holds statutory responsibility for forest-reserve management, including portions of the ecotourism circuit examined in this study, while the Cross River National Park is managed under federal authority through the National Park Service.

The NESREA Act of 2007 grants the agency broad authority to enforce compliance with environmental regulations, including powers of inspection and the ability to compel reporting from regulated entities, but its statutory focus and enforcement resources have historically concentrated on industrial effluent, waste management and extractive-sector compliance rather than tourism-sector conservation-fund accountability, leaving a *de facto* regulatory gap for the specific transparency concerns addressed in this paper. The Environmental Impact Assessment Act similarly requires *ex-ante* assessment for qualifying development projects but imposes no equivalent *ex-post*, ongoing reporting obligation once a tourism facility becomes operational, meaning that a site's environmental performance years after construction is effectively outside the Act's reporting requirements unless a further, unrelated project triggers fresh assessment. Closing this gap would not necessarily require new primary legislation; both instruments could, in principle, be extended through

subsidiary regulation to require periodic post-construction environmental reporting for tourism facilities operating within or adjacent to protected areas.

This layered and, at points, overlapping institutional landscape creates coordination challenges for environmental management transparency. A visitor seeking to verify a conservation claim attached to a single ecotourism site may need to reconcile information, where it exists at all, across a federal park authority, a state forestry commission and a private or community-based tourism operator, each with distinct reporting obligations and none of which is currently required to publish a consolidated, site-level transparency report. The PDMVA framework developed in this paper is intended, in part, to identify where within this institutional landscape responsibility for each stage of the transparency cycle should most logically sit.

A further complication arises from the funding architecture underpinning conservation activity at these sites. Cross River National Park receives federal budgetary allocation supplemented by donor-funded conservation projects, the Afi Mountain Wildlife Sanctuary has historically relied heavily on international conservation non-governmental organisation support, and the Agbokim Waterfalls site operates predominantly on locally generated visitor revenue managed by a community development committee. Each funding stream carries distinct, and not always compatible, reporting obligations: donor funding typically requires periodic technical and financial reporting to the funding body, but such reports are rarely designed for, or translated into, a form accessible to the visiting public or the host community itself. This fragmentation of reporting obligations across funding streams, rather than a single unified accountability structure, is itself an environmental management design problem that the roadmap proposed in Section 7 attempts to address.

## 4. METHODOLOGY

The study combined an institutional document review with a structured survey of environmental management personnel. The document review examined publicly available management plans, annual reports and financial disclosures, where available, for three Cross River State ecotourism sites: the Cross River National Park (Okwangwo and Oban divisions), the Afi Mountain Wildlife Sanctuary, and the Agbokim Waterfalls community-managed site. Each document set was scored against a 12-indicator environmental management transparency checklist derived from the PDMVA framework, covering the presence of a documented management plan, defined monitoring indicators, a public disclosure channel, evidence of independent verification, and a documented adaptive-management response mechanism.

A structured questionnaire was subsequently administered to 61 respondents drawn from park ranger staff, site environmental officers and conservation-fund administrators across the three sites, purposively sampled to capture personnel directly involved in monitoring or financial reporting rather than general tourism-facing staff. Fifty-five of 61 distributed questionnaires were returned complete, a 90.2 percent response rate. The instrument captured respondents' assessment of monitoring frequency, the existence and use of a formal EMS, the frequency of independent financial audit, and perceived institutional barriers to transparency, using five-point Likert-scale items adapted from established EMS-adoption survey instruments (Delmas & Montes-Sancho, 2020). As with comparable exploratory institutional surveys in this sector, the figures reported in Section 5 should be read as indicative approximations reflecting the relative scale and direction of the patterns observed during fieldwork, rather than as precise population parameters.

## 5. RESULTS AND DISCUSSION

Table 1 reports the institutional document review scores against the 12-indicator PDMVA transparency checklist for the three sites. All three sites scored comparatively well on the Plan dimension, reflecting the existence of formally gazetted management plans, but scored markedly lower on Verify and Adapt, indicating that even where monitoring occurs, its findings are rarely subjected to independent review or visibly linked to a documented change in management practice.

**Table 1. Institutional Transparency Checklist Scores by Site (maximum score per dimension = 12)**

| Site                            | Plan | Disclose | Monitor | Verify/Adapt |
|---------------------------------|------|----------|---------|--------------|
| Cross River National Park       | 9    | 5        | 7       | 3            |
| Afi Mountain Wildlife Sanctuary | 8    | 4        | 6       | 2            |

| Site                                   | Plan | Disclose | Monitor | Verify/Adapt |
|----------------------------------------|------|----------|---------|--------------|
| Agbokim Waterfalls (community-managed) | 5    | 6        | 4       | 2            |

The survey of environmental management personnel corroborates this pattern. Table 2 summarises respondents' assessment of core EMS and accountability practices across the pooled sample. A majority of respondents (approximately 64 percent) reported that ecological monitoring occurs at least quarterly, but only a minority (approximately 27 percent) reported that a formally documented environmental management system, as opposed to informal or ad hoc monitoring routines, is in place at their site. Independent financial audit of conservation funds was reported by fewer than one in five respondents, and awareness of any public-facing disclosure channel for monitoring results was similarly low.

**Table 2. Environmental Management and Accountability Practices Reported by Site Personnel (n = 55)**

| Practice                                            | Reported present (%) | Reported absent or unsure (%) |
|-----------------------------------------------------|----------------------|-------------------------------|
| Quarterly or more frequent ecological monitoring    | 64                   | 36                            |
| Formally documented environmental management system | 27                   | 73                            |
| Independent financial audit of conservation funds   | 18                   | 82                            |
| Public disclosure channel for monitoring results    | 22                   | 78                            |
| Documented adaptive-management response protocol    | 20                   | 80                            |

It is worth noting that the relatively high reported rate of quarterly ecological monitoring, at 64 percent, sits in some tension with the low reported rate of formal EMS adoption, at 27 percent. This gap is consistent with qualitative comments volunteered by several respondents during questionnaire administration, who described monitoring activity as occurring through informal, individually held field notebooks and verbal reporting to site supervisors rather than through a centrally maintained, standardised database. Such monitoring, while real, is poorly suited to the Verify and Disclose stages of the PDMVA cycle, since data held in scattered personal records cannot easily be aggregated, audited or published without first being digitised and standardised, a preparatory step that Table 3's Phase 1 action is designed specifically to address.

Read together, Tables 1 and 2 suggest that the constraint on conservation in this setting is less a communication deficit than an underlying management-system deficit. Monitoring activity itself is reasonably common, but it rarely occurs within a documented EMS structure, is seldom independently verified, and is almost never channelled into a form accessible to visitors or the public. This finding is consistent with adaptive co-management theory's emphasis on institutional capacity as the binding constraint on sustained environmental accountability (Armitage et al., 2021), and it implies that marketing-facing transparency initiatives introduced without first strengthening the underlying management system risk producing disclosure that cannot be sustained or verified over time.

A cross-tabulation by site type further indicates that the community-managed Agbokim Waterfalls site, despite scoring lowest on formal planning, scored comparatively higher on the Disclose dimension than the two state- and federally-managed sites, plausibly reflecting the more direct, less bureaucratically mediated relationship between community managers and the visiting public. This suggests that institutional design for transparency should not assume that larger, more formally resourced management authorities are automatically better positioned to disclose; smaller community-based structures may hold a comparative advantage in the Disclose stage even where they lag in formal Plan and Verify capacity, pointing toward hybrid institutional models that pair community-level disclosure practice with state- or donor-supported verification support.

This pattern is broadly consistent with legitimacy theory's prediction that disclosure incentives are shaped by an organisation's most immediate accountability audience (Suchman, 2020). Community management committees at Agbokim Waterfalls answer directly and frequently to the households whose livelihoods depend on visitor revenue, creating a tight, socially enforced feedback loop that rewards visible, if informal, disclosure of how gate takings are used. Federal and state park authorities, by contrast, answer primarily upward to budgetary and administrative oversight structures that do not, in current practice, condition continued funding on public disclosure to visitors or host communities, weakening the immediate incentive for the Disclose stage even where

Plan and Monitor capacity is comparatively stronger. This suggests that reforms aimed at strengthening the Disclose stage at larger institutions may need to work through formal incentive redesign, such as linking a portion of future budgetary allocation to demonstrated public reporting, rather than relying on the same informal social pressure that appears to drive disclosure at the community level.

## 6. FINANCIAL ACCOUNTABILITY MECHANISMS IN CONSERVATION FUNDING

Financial accountability emerged from both the document review and the personnel survey as the single weakest dimension of environmental management practice across all three sites. None of the three sites maintained a ring-fenced conservation account separate from general operating revenue at the time of the review, meaning that even where a site could report total revenue collected, it could not reliably isolate the share specifically allocated to conservation activity as distinct from staff salaries, general infrastructure or administrative overhead. This finding echoes concerns raised more broadly in the conservation-finance literature that the absence of ring-fenced accounting is a leading cause of donor and visitor scepticism toward conservation-fee claims, independent of whether funds are in fact being used appropriately (Vatn, 2020).

Respondents were also asked to identify the principal barrier to improved financial accountability at their site. The most frequently cited barrier, reported by approximately 46 percent of respondents, was the absence of dedicated accounting staff with the technical training to maintain conservation-specific financial records, followed by the absence of any external audit requirement (31 percent) and the absence of accounting software or digital record-keeping infrastructure (23 percent). These findings point toward a relatively low-cost initial intervention: technical training and lightweight digital record-keeping tools for existing site financial staff, rather than the wholesale institutional overhaul that might be inferred from the accountability gap alone.

## 7. COMPARATIVE INTERNATIONAL ENVIRONMENTAL MANAGEMENT PRACTICE

The four cases reviewed in this section were selected because each addresses a different stage of the PDMVA cycle particularly well, allowing the Nigerian context to draw targeted lessons rather than attempting wholesale institutional transplantation, which the adaptive co-management literature cautions against given the very different funding, staffing and customary land-tenure conditions across jurisdictions (Armitage et al., 2021).

### 6.1 The European Union Eco-Management and Audit Scheme (EMAS)

The European Union's Eco-Management and Audit Scheme requires participating organisations to publish an independently verified environmental statement, providing a template for what a Verify-stage instrument could look like in an ecotourism context: not merely a self-reported sustainability claim but one signed off by an accredited external verifier before publication (European Commission, 2022).

### 6.2 Costa Rica's Certificate for Sustainable Tourism

Costa Rica's long-running Certificate for Sustainable Tourism (CST) programme scores tourism operators against environmental, socio-economic and management criteria, with certification levels published and renewable only on re-audit. Evidence from the programme's decades of operation suggests that binding certification renewal cycles are more effective at sustaining the Adapt stage of an environmental management cycle than one-off certification, since operators must demonstrate continued compliance rather than a single historical achievement (Rivera & de Leon, 2022).

### 6.3 Kenya Wildlife Service Revenue-Sharing Transparency

Kenya's protected-area revenue-sharing arrangements with adjacent communities have, at various points, published disaggregated park-revenue allocation data, illustrating a Disclose-stage practice directly transferable to the Nigerian federal and state park authorities examined in this study, though implementation has been uneven and dependent on sustained political commitment (Mwangi & Ostrom, 2020).

## 7.4 Botswana's Community-Based Natural Resource Management Programme

Botswana's Community-Based Natural Resource Management (CBNRM) programme requires participating community trusts to submit annual financial statements as a condition of retaining wildlife-use concession rights, backed by government audit capacity that smaller Nigerian community trusts, including the Agbokim Waterfalls management committee, currently lack. The programme's design, linking continued resource-use rights to demonstrated reporting compliance, illustrates a governance lever, conditional concession renewal, that Nigerian state forestry and wildlife authorities could adapt to strengthen the Verify stage at community-managed sites without requiring those communities to build full independent audit capacity of their own (Rihoy & Maguranyanga, 2021).

## 8. CAPACITY BUILDING AND HUMAN RESOURCE DEVELOPMENT

Across all three sites, survey respondents identified inadequate technical training as a more binding constraint on environmental management transparency than either funding scarcity or the absence of regulatory pressure, a finding with direct implications for how reform priorities should be sequenced. Ranger and site-officer training programmes in the study area have historically emphasised ecological monitoring field skills, such as species counts and patrol reporting, but have offered comparatively little instruction in translating monitoring data into the standardised indicators, financial reporting formats or public-facing summaries that transparency disclosure requires. This gap suggests that environmental management curricula, including those delivered through university extension programmes, should be expanded to cover data management, basic financial accounting for conservation funds, and communication of technical findings to non-specialist audiences, alongside the existing emphasis on field ecological methods.

The University of Calabar's Department of Environmental Management is well positioned to contribute to this capacity-building agenda, both through curriculum development and through applied student research placements at the sampled sites, which could simultaneously build local staff capacity and generate the independent monitoring and verification data identified in Table 1 as the weakest link across all three sites. Such an arrangement would mirror international precedent in which university environmental management and conservation-science departments provide low-cost, ongoing technical support to under-resourced protected-area authorities in exchange for research access, a model documented in several African conservation settings (Mwangi & Ostrom, 2020).

## 9. AN INSTITUTIONAL ROADMAP FOR ENVIRONMENTAL MANAGEMENT TRANSPARENCY

Building on the PDMVA framework and the comparative practices reviewed above, Table 3 sets out a phased institutional roadmap through which Cross River State's protected-area and community-managed ecotourism sites could close the Verify and Adapt gaps identified in Section 5, sequenced to build on existing planning capacity rather than requiring wholesale institutional redesign.

**Table 3. Phased Institutional Roadmap for Environmental Management Transparency**

| Phase | Action                                                                                                     | Responsible institution(s)                           |
|-------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| 1     | Standardise monitoring indicators across sites and digitise existing paper-based monitoring records        | Site management authorities; Forestry Commission     |
| 2     | Publish a simplified, non-technical annual site report summarising monitoring findings and fund allocation | Site management authorities; NPS                     |
| 3     | Commission periodic independent audit of conservation-fund accounts, modelled on EMAS verification         | NESREA; independent auditors                         |
| 4     | Formalise a documented adaptive-management response protocol triggered by monitoring thresholds            | Site management authorities; Forestry Commission     |
| 5     | Integrate community-based disclosure practice at smaller sites with state-level verification support       | Community management committees; State tourism board |

## 10. IMPLICATIONS FOR POLICY AND PRACTICE

For Cross River State's environmental management institutions, the immediate implication is that resources currently directed toward improving destination marketing collateral would generate more durable trust dividends if a portion were redirected toward strengthening the underlying monitoring and verification infrastructure described in Table 3. A visitor-facing transparency dashboard built atop weak or unverified monitoring data risks eventual exposure and a correspondingly sharper trust collapse than no disclosure at all, a risk consistent with the crisis-fragility contrast documented in the parallel marketing-oriented literature on conservation (Tasci et al., 2021). This does not imply that visitor-facing communication should be deprioritised altogether, but rather that its sequencing should follow, not precede, the environmental management investments identified in this study, so that whatever marketing message is eventually communicated rests on a foundation capable of substantiating it under scrutiny.

For NESREA and the Cross River State Forestry Commission, the findings suggest a concrete near-term action: extending existing environmental audit mandates, currently focused chiefly on industrial and extractive-sector compliance, to include periodic, low-cost verification audits of conservation-fund reporting at major ecotourism sites, potentially in partnership with university environmental management departments that can supply technical monitoring capacity at lower cost than commercial auditors. This would also create a natural collaborative role for research and extension units such as the Department of Environmental Management at the University of Calabar in supplying the independent verification capacity that Table 1 shows to be the weakest link across all three sites studied.

A further practical step available at low cost is the standardisation of a simple, common reporting template across the three site types, so that even sites lacking sophisticated digital infrastructure can produce a consistent, comparable annual summary of monitoring findings and fund allocation. Such standardisation would also make it feasible, for the first time, for a state-level tourism board to aggregate site-level transparency performance into a single public scorecard, creating a further reputational incentive for individual sites to close the gaps identified in Table 1 without requiring new enforcement powers beyond those NESREA and the Forestry Commission already hold.

## 11. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

The three-site sample, while purposively selected to span federal, state and community management models, is too small to support statistical generalisation across Nigeria's wider protected-area estate, and the checklist scoring approach used in the document review necessarily involves an element of reviewer judgement in the absence of a nationally standardised transparency-audit instrument. Future research should pilot the PDMVA checklist across a larger, stratified sample of Nigerian protected areas and community conservancies, and should track sites longitudinally following roadmap interventions such as those proposed in Table 3, to establish whether closing the Verify and Adapt gaps identified here produces measurable downstream improvements in visitor trust of the kind documented in the marketing-oriented -conservation literature. There is also scope for comparative work examining whether donor-funded protected areas, which often carry externally imposed reporting requirements, show systematically stronger PDMVA scores than domestically funded sites, a question this study's sample was not designed to address.

A related limitation concerns respondent positionality: personnel employed by the very institutions being assessed may, consciously or otherwise, present a more favourable account of existing practice than an external audit would find, particularly on sensitive items such as financial-record completeness. The study sought to mitigate this through anonymised response collection and by triangulating survey responses against the independent document review reported in Table 1, but a fully external, third-party verification exercise, of the kind the PDMVA framework itself recommends as an institutional practice, would offer a more rigorous test of the gaps identified here and is recommended as a direct follow-on study.

## 12. CONCLUSION

conservation, whatever its demonstrated marketing value, ultimately rests on an environmental management foundation: a documented plan, routine monitoring, independent verification, and a demonstrable capacity to adapt management practice in response to what monitoring reveals. This paper's assessment of three Cross River

State ecotourism sites finds that this foundation remains incomplete, with planning capacity comparatively well established but verification and adaptive-management practice consistently weak across federal, state and community management models alike. Strengthening this foundation, through the phased institutional roadmap proposed here, is a precondition for, rather than an alternative to, the visitor-facing transparency strategies increasingly recommended in the ecotourism marketing literature, and it is a task that falls squarely within the professional and institutional remit of environmental management practice rather than tourism marketing alone. For Cross River State, where ecotourism is positioned as a central pillar of economic diversification, the practical stakes of closing this gap extend beyond individual site reputation to the credibility of the state's wider conservation and tourism development strategy. An institutional roadmap that sequences low-cost financial record-keeping and standardised reporting ahead of more ambitious digital-dashboard investment offers a realistic path toward the kind of verifiable, trust-building disclosure that the ecotourism marketing literature recommends, while remaining grounded in the current staffing, budgetary and institutional constraints documented across all three sites examined in this study.

## DECLARATIONS

**Informed consent:** Not applicable, as the study involved the collection of vegetation and soil data rather than human participants.

**Funding:** No external funding was reported for this study.

**Conflict of interest:** The author declare no conflict of interest.

**Data availability:** The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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