



Octa Journal of Environmental Research

(Oct. Jour. Env. Res.) ISSN: 2321-3655

Journal Homepage: <http://www.sciencebeingjournal.com>



HYBRID GOVERNANCE AND ENVIRONMENTAL SUSTAINABILITY: AFRICAN PERSPECTIVES BASED ON THE CASE OF BOBO-DIOULASSO

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Received: 1st Aug. 2026 **Revised:** 27th Aug. 2026 **Accepted:** 10th Sept. 2026

Abstract: Environmental governance in African cities remains under-researched regarding the coexistence of municipal and customary authorities—a relationship often perceived as conflict-ridden. This study addresses this gap by analyzing how this institutional dualism can be transformed into a strategic resource for territorial sustainability, using the case of Bobo-Dioulasso (Burkina Faso). The methodology employs a triangulation of documentary, qualitative, and quantitative approaches, combining the analysis of regulatory texts, interviews with 70 institutional and community stakeholders, questionnaires administered to 200 citizens, and participant observation during municipal council sessions and community meetings. The results demonstrate that hybrid governance can serve as a framework for territorial resilience, provided that roles are clarified, financial autonomy is strengthened, and indigenous knowledge is institutionalized. The article's distinctive contribution lies in highlighting institutional fragmentation as a strategic resource by integrating concepts of polycentricity (Ostrom), stakeholder integration (Freeman), and emergent strategy (Mintzberg). This operational model of hybrid governance offers insights for environmental policies tailored to African realities.

Keywords: Hybrid governance; Polycentric governance; Environmental sustainability; Emergent strategy.

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INTRODUCTION

Sustainable development, as defined by the Brundtland Report (1987), is a pressing imperative for African cities today amidst rapid urbanization, mounting pressure on resources, and climate-related vulnerabilities (Sachs, 2015). African cities must meet the immediate needs of their populations while forging sustainability pathways tailored to local realities (Agyeman, 2020). Bobo-Dioulasso exemplifies this paradox. On one hand, local initiatives exist regarding sanitation, reforestation, and the valorization of non-timber forest products; on the other, their impact remains constrained by financial, institutional, and socio-cultural factors (Nzinga, 2022). Local governance appears fragmented between the municipality and customary authorities—a situation that aligns

with the findings of Bukari (2025) regarding the fragility of decentralization in West Africa. Several theoretical frameworks offer valuable insights into these dynamics. Ostrom (1990, 2009) demonstrated that local communities are capable of self-organizing to manage common-pool resources sustainably, provided that clear rules, sanction mechanisms, and platforms for dialogue are established. This perspective is particularly relevant to Bobo-Dioulasso, where indigenous knowledge and customary practices can bolster the legitimacy and effectiveness of environmental policies if integrated with municipal systems. Building on this, Ostrom (2010) emphasizes polycentric governance, arguing that the coexistence of multiple autonomous decision-making centers is more effective than a single centralized model for managing complexity. In the same vein,

Freeman (1984) notes that strategic performance depends on the ability to integrate the interests and expectations of stakeholders. Applied to environmental governance, this approach highlights that sustainability cannot be achieved without the active involvement of elected officials, technical departments, civil society organizations, traditional authorities, and citizens. In Bobo-Dioulasso, the lack of coherent multi-actor coordination partly explains the gap between policy intentions and concrete results. Finally, the concept of emergent strategy developed by Mintzberg (1987) helps us understand that local governance does not stem solely from deliberate plans or official documents but is built progressively through daily practices, informal adjustments, and compromises among actors. In the context of Bobo-Dioulasso, this perspective sheds light on how local initiatives—such as sanitation, reforestation, or the utilization of non-timber forest products—emerge from collective action and interactions between the municipality, traditional authorities, and civil society organizations. Thus, the central issue is framed as follows: how can the institutional dualism between the municipality and traditional authorities be transformed into a strategic resource for environmental sustainability by mobilizing indigenous knowledge, integrating stakeholders, and adopting an emergent strategy capable of strengthening territorial resilience?

EXPERIMENTAL

Research approach: This research adopts an exploratory qualitative approach, complemented by quantitative tools, to capture the complexity of environmental governance in Bobo-Dioulasso. The choice of this methodological triangulation (documentary, qualitative, and quantitative) addresses the need to compare regulatory and institutional texts with local practices, while also incorporating the perceptions of stakeholders. This approach makes it possible to move beyond a merely descriptive account and ground the analysis in a strategic framework, consistent with

the theoretical perspectives employed (Ostrom, Freeman, Mintzberg).

Sampling & Participants: Purposive sampling was employed, based on the relevance of the actors to the issues under study. Two levels were distinguished:

- a) Institutional and community actors (70 individuals): municipal elected officials, representatives of decentralized state services, customary and religious authorities, heads of youth and women's associations, community leaders, and civil society organizations. Although the number of respondents per category may appear limited, each represents a broader institutional or community entity (e.g., a town hall, a technical department, a customary chieftaincy, or an association). Interviews were conducted until data saturation was reached—that is, the point at which responses became redundant and yielded no new information. This qualitative approach ensures analytical depth in the data collected, despite the small size of the sub-samples.
- b) Ordinary citizens (200 individuals): surveyed via questionnaire, stratified by gender, age, socioeconomic status, and geographic location (city center, outlying neighborhoods, and villages attached to the municipality). The response rate was 100%, lending robustness to the descriptive results and allowing for the identification of significant trends.

This methodological complementarity makes it possible to cross-reference the strategic vision of elites with the social perceptions of citizens, aligning with the polycentric approach (Ostrom, 1990, 2009), stakeholder theory (Freeman, 1984), and the concept of emergent strategy (Mintzberg, 1987). It demonstrates that the chosen sampling strategy aims not merely to represent the diversity of actors, but to highlight how their concrete interactions contribute to the construction of hybrid governance and an architecture of territorial resilience.

Table 1. Distribution of Individuals Reached by the Study According to Actor Categories

Actor categories	Number retained	Justification
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Municipal elected officials: mayor, deputies, and municipal councillors	10	They represent the local institutional authority and directly participate in formal decision-making within the municipality.
Decentralized state services: environment, agriculture, finance, and health	10	They provide technical and institutional expertise in various domains related to local management and development.
Customary and religious authorities	15	They embody local forms of governance and play an important role in social and community regulation.
Community leaders: neighborhood chiefs and heads of village development councils (vdc's)	10	They are proximity actors involved in the daily management of community affairs.
Civil society organizations: local ngos, women's associations, and youth associations	20	They carry social and environmental demands and contribute to citizen mobilization and participation.
Technical and financial partners (tfps)	5	They provide technical, financial, and sometimes institutional support to local development projects and programs.
Local populations: ordinary citizens and households	200	They allow the collection of perceptions, experiences, and expectations of the social base regarding governance and local development.
Total	270 respondents	—

Source: Primary Survey

Data Collection: Data collection took place between January and April 2024. It combined:

- Documentary analysis of regulatory texts (Constitution, Forestry and Environmental Codes, PNDD, SCADD, PNDES, municipal development plans) to compare stakeholder narratives with existing normative frameworks;
- Semi-structured interviews with identified stakeholders, focusing on their roles, practices, and perceptions of environmental governance;
- Likert-scale questionnaires, administered to measure perceptions regarding institutional collaboration, financial autonomy, and the integration of indigenous knowledge;
- Participant observation conducted during municipal council sessions, community meetings, and fieldwork activities, to directly capture collaboration dynamics and informal adjustments among stakeholders.

Data Processing & Analysis: Thematic coding of the qualitative data was carried out systematically using QDA Miner Lite software. A codebook was developed iteratively, drawing on both research hypotheses and themes emerging from the interviews (e.g., institutional collaboration, financial autonomy, integration of

indigenous knowledge, and tensions arising from overlapping competencies). Category consistency was ensured through an iterative review process: codes were adjusted and harmonized progressively until the themes stabilized. As a doctoral researcher, I did not employ a formal inter-coder reliability mechanism of the type used in large research teams. However, I reinforced methodological rigor through internal cross-checks: reviewing transcripts, comparing codes against initial analysis frameworks, and obtaining validation from my thesis supervisor. Co-occurrence matrices generated by QDA Miner Lite made it possible to identify relationships between themes, visualize convergences and divergences among stakeholders, and shed light on areas of institutional tension. Data saturation was reached when interviews ceased to yield new information, thereby reinforcing the validity of the findings. Regarding the quantitative data derived from questionnaires administered to 200 citizens, we chose to limit the analysis to descriptive statistics (frequencies and percentages). This methodological choice is justified by two main reasons:

- The study relies on a triangulation of documentary, qualitative, and quantitative data, in which the quantitative component was designed to

complement and provide objective evidence for certain trends, rather than serving as a statistical survey intended for generalization.

- The sample size allows for the identification of significant trends but does not warrant the use of complex statistical models. In this context, descriptive statistics provide empirical value by confirming or nuancing the qualitative findings, while maintaining the coherence of the exploratory approach.

Validity and Limitations

The validity of the results rests on several methodological elements:

- The diversity of the profiles interviewed, including institutional and community stakeholders as well as ordinary citizens,
- Qualitative data saturation, reached when interviews ceased to yield new information,
- Feedback from respondents, which allowed for the verification of the interpretations' relevance,
- Analytical traceability ensured by the use of QDA Miner Lite software, through the codebook, co-occurrence matrices, and iterative coding adjustments.

Regarding the quantitative component, we chose to limit the analysis to descriptive statistics (frequencies and percentages). This choice is justified by the study's exploratory nature—based on a triangulation of documentary, qualitative, and quantitative data—where the quantitative aspect was designed as a complement to objectify certain trends, rather than as a statistical survey aimed at generalization.

Certain limitations must be explicitly acknowledged:

- The sample imbalance between institutional elites (a limited number, yet representative of broader structures) and ordinary citizens, which may reduce

the scope of claims regarding institutional dynamics,

- The absence of longitudinal or observational data on the concrete outcomes of environmental projects, limiting the assessment of local policies' actual impact over time,
- The subjectivity of interviews, which can introduce bias despite efforts toward systematic coding and validation,
- The partial transposition of international theoretical models to the African context, requiring caution in interpretation.

These limitations do not invalidate the results but suggest viewing them as structural trends that provide a solid basis for strategic analysis and the formulation of operational recommendations.

RESULTS & DISCUSSION

The study's results are structured around three complementary components: documentary, qualitative, and quantitative. This triangulation makes it possible to cross-reference local initiatives, stakeholder perceptions, and trends observed within the population.

Documentary Results: Analysis of municipal plans and institutional reports confirms the existence of joint projects regarding sanitation (ditch clearing, waste collection), reforestation, the protection of sacred sites, and the promotion of local products. These actions reflect a shared commitment to improving living conditions and strengthening social cohesion. However, the documents also reveal certain weaknesses: a lack of green budgeting, poorly structured municipal action plans, and a reliance on external funding, which limits local ownership.

Qualitative Results: To systematically present the perceptions gathered from the 70 stakeholders interviewed, the qualitative results are displayed in a summary table. This table highlights areas of convergence and divergence by theme, followed by a commentary illustrating key points through representative quotes and local references.

Table 2. Synthesis of Qualitative Results (N = 70)

Main themes	Overall results (n/70)	Trends by actors	Sources	Convergences / divergences
Positive Effects	Hygiene:40 Diseases:25	CSOs and community leaders emphasize hygiene	Municipal sanitation plans;	Consensus on environmental and

	Heritage:22 Green jobs:35	and employment; customary authorities highlight heritage	CSPS data; CSO reports on NTPPs	socio-economic benefits
Overlapping competencies	25/70	Elected officials and customary leaders denounce land conflicts; decentralized services note administrative duplications	Verbatims from elected officials and customary leaders	Consensus: existence of overlaps slowing down projects
Financial autonomy	Elected officials: 9/15 consider resources sufficient;Services: 12/15 consider autonomy limited; CSOs + leaders: 30/30 consider autonomy insufficient	Clear divergence between elected officials and community actors	Municipal budget reports; CSO testimonies	Institutional vs. community divergence
Integration of local knowledge	≈55/70	Elected officials acknowledge partial consideration; customary leaders denounce marginalization; CSOs highlight initiatives	Testimonies from customary leaders; CSO reports	Divergence: elected officials more positive, customary leaders more critical
Consultation and cooperation	52/70	Elected officials and services cite existing frameworks; CSOs regularly involved; customary leaders participate occasionally	Minutes of municipal consultation meetings	Consensus: need to strengthen consultation
Weaknesses	External funding: 50; Monitoring: 38; Human resources: 33	All categories underline dependency and lack of means	Reports	Consensus on structural limitations
Institutional tensions	25/70	Elected officials and customary leaders mention overlaps; community leaders note misunderstandings	Verbatims from customary leaders and elected officials	Consensus: tensions slowing down implementation

Source: Primary Survey

Qualitative results show that stakeholders share several observations but diverge on certain key points:

- Positive effects: 40 out of 70 respondents—including civil society organization (CSO) members and community leaders—note an improvement in public hygiene, a finding confirmed by municipal sanitation plans (2023) that report a reduction in illegal dumping. Additionally, 25 out of 70 respondents—primarily from decentralized government services—attribute the decline in cases of diarrhea and malaria to drain-clearing operations, a link corroborated by data from the Bobo-Dioulasso health district (2024). Finally, 35 out of 70 respondents—notably youth and women's associations—highlight the creation of green jobs linked to waste valorization and the use of non-timber forest products, a trend confirmed by reports from local CSOs.
- Overlapping mandates: A significant proportion of stakeholders (25 out of 70) highlight recurring conflicts between the municipality and traditional authorities, confirming the need to clarify respective mandates. Statements from respondents clearly illustrate the clash of legitimacies. A former mayor explains: Traditional chiefs consider themselves to hold traditional legitimacy, whereas the municipality operates based on official regulations (M.B., April 2024). From the traditional side, a land chief (custodian of customary land rights) criticizes the situation: The municipality allocates plots without always consulting the land chiefs, which creates tension with families (S.N., April 2024). These testimonies reflect persistent institutional overlaps that undermine local governance.

- **Financial autonomy:** the analysis reveals a marked divergence between municipal elected officials and community actors/CSOs. Elected officials (9/15) consider resources relatively sufficient, while acknowledging the weakness of own-source revenue, as one official noted: Own-source revenue accounts for a small share—about 20% to 30%—of the budget (S.B., March 2024). Conversely, community actors and CSOs (30/30) decry a chronic lack of funds, a view confirmed by a community leader: The municipality provides little financial support; we primarily mobilize the residents ourselves (Z.L., March 2024). This contrast reflects a rift between institutions and the population and confirms the central role of financial issues in local governance—a point already highlighted in municipal budget reports.
- **Integration of local knowledge:** perceptions differ; elected officials acknowledge that such knowledge is taken into account only partially, whereas traditional leaders clearly express their frustration: When our knowledge is ignored, the people feel excluded (S.N., April 2024).
- **Consultation and cooperation:** There is a strong consensus on the need to strengthen consultation frameworks, even though participation levels vary among stakeholders. CSOs appear to be the most consistently involved, a fact confirmed by municipal consultation minutes. Surveys indicate that these meetings facilitate the search for compromises among the municipality, traditional leaders, and communities, reflecting a shared desire to consolidate local cooperation.
- **Vulnerabilities:** there is a consensus regarding dependence on external funding (50/70), the absence of monitoring and evaluation (38/70), and a lack of human and technical resources (33/70). An official from the Provincial Environment Directorate summarizes the situation: The town hall carries out ad hoc operations, but there is no clear strategic plan for the environment (D.A., March 2024).
- **Institutional tensions:** acknowledged across all categories, this slow down project implementation and undermine local governance. In particular, they reflect a failure to involve traditional leaders from the design stage onwards, which explains the significant proportion (25 out of 70) of respondents confirming their negative impact on project delivery.

Quantitative Results: The questionnaires administered to 200 citizens made it possible to objectify certain trends. The descriptive results are summarized in the table below:

Table 3. Citizens' Perceptions of Environmental Governance (N = 200)

Evaluated dimension	Response modalities (likert scale 1–5)	Frequency (n)	Percentage (%)
Collaboration between municipality and customary authorities	Very weak / Weak	124	62 %
	Average	26	13 %
	Satisfactory / Very satisfactory	50	25 %
Financial and institutional autonomy	Very weak / Weak	138	69 %
	Average	34	17 %
	Satisfactory / Very satisfactory	28	14 %
Integration of endogenous knowledge	Very weak / Weak	82	41 %
	Average	56	28 %
	Satisfactory / Very satisfactory	62	31 %

Source: Primary Survey

The study results show that environmental governance in Bobo-Dioulasso is characterized by overlapping jurisdictions, limited financial autonomy, and only partial integration of indigenous knowledge. When viewed against the theoretical frameworks employed, these findings help clarify the scope and limitations of classical governance models.

- Collaboration between the municipality and customary authorities is deemed weak by a majority (62%), confirming the institutional tensions identified during interviews.
- Financial autonomy is perceived as highly insufficient (by nearly 70%), corroborating qualitative findings

regarding dependence on public transfers and external partners.

- The integration of indigenous knowledge presents a more nuanced picture: 41% rate it as weak, yet 31% consider it satisfactory, indicating potential for improvement if consultation mechanisms are strengthened.

Ostrom and the governance of the commons:

The case study confirms the relevance of Ostrom's (1990) principles: local communities possess customary rules and regulatory practices that foster the sustainable management of resources (such as sacred sites, water sources, and community forests). However, the experience in Bobo-Dioulasso adds nuance to this approach: self-organization is undermined by the lack of legal recognition for customary authorities and by the financial dependence of municipalities. Polycentric governance (Ostrom, 2010) emerges here as a relevant approach, demonstrating that the coexistence of multiple decision-making centers can enhance resilience—provided that customary forms of legitimacy receive institutional recognition.

Freeman and the stakeholder model: The stakeholder approach (Freeman, 1984) is validated by the significant role played by CSOs and community leaders in consultative frameworks. Their regular involvement demonstrates that strategic performance indeed hinges on integrating diverse interests. However, the case of Bobo-Dioulasso reveals a limitation of the model: stakeholder integration is hindered by power and resource asymmetries. Traditional leaders, despite possessing social legitimacy, remain marginalized within institutional structures. The model must therefore be adapted to the African context to account for the plurality of legitimacies (legal, customary, and social) and the structural inequalities shaping local governance.

Mintzberg and emergent strategy: The concept of emergent strategy (Mintzberg, 1987) sheds particular light on the observed dynamics. In Bobo-Dioulasso, hybrid governance does not stem solely from deliberate plans or official regulations; rather, it is progressively constructed through the actors' daily practices.

Local initiatives regarding sanitation, reforestation, or the valorization of non-timber forest products illustrate this logic: they emerge from collective action, informal adjustments, and compromises among the municipality, traditional leaders, and CSOs. The case study thus confirms that, in an African context, strategy is less a planned trajectory than an adaptive construct shaped by institutional interactions and tensions.

Towards a definition of territorial resilience architecture: The concept of territorial resilience architecture can be defined as a hybrid governance system that organizes the coexistence of multiple forms of legitimacy (legal, customary, social) and transforms institutional tensions into levers for cooperation. It rests on three pillars empirically observed in Bobo-Dioulasso:

- Polycentricity: the presence of multiple decision-making centers (municipality, customary leadership, CSOs, citizens) which, despite overlapping, create spaces for negotiation and coordination.
- Stakeholder integration: the active participation of social and community actors, which lends legitimacy and local ownership to projects.
- Emergent strategy: the actors' capacity to adjust their day-to-day practices, devise pragmatic solutions, and transform constraints (financial, institutional) into opportunities for cooperation.

Thus, territorial resilience architecture is not an imposed normative model, but an empirical construct arising from observed interactions. It manifests in joint projects concerning sanitation, reforestation, and the protection of sacred sites, where institutional fragmentation becomes a strategic resource provided it is accompanied by mechanisms for consultation and coordination.

Alternative explanations and counter-arguments: While the architecture of territorial resilience appears to be an adaptive construct emerging from interactions between the municipality, customary authorities, and CSOs, certain limitations qualify this interpretation:

- Elite capture: certain projects may be instrumentalized by elected officials or

customary authorities to consolidate their power, thereby diminishing the participatory scope.

- Donor-driven projects: reliance on external funding sometimes steers priorities toward international agendas, risking a lack of local ownership.
- Political cycles and discontinuity: changes in municipal or customary leadership can disrupt cooperative dynamics, rendering initiatives fragile if they are not institutionalized.

These alternative explanations demonstrate that hybrid governance does not automatically constitute an architecture of territorial resilience. It only becomes one when mechanisms for consultation, coordination, and the leveraging of endogenous knowledge succeed in overcoming the dynamics of capture, dependency, and discontinuity.

The case of Bobo-Dioulasso:

- Confirms Ostrom's insights regarding the importance of local rules and polycentricity, while demonstrating that these must be aligned with formal institutions;
- Refines Freeman's work by revealing that stakeholder integration must account for power asymmetries and multiple forms of legitimacy;
- Illustrates Mintzberg's theories by showing that strategy does not stem solely from deliberate plans but emerges from daily practices and institutional compromises.

Hybrid governance thus emerges as an adaptive architecture for territorial resilience, capable of transforming institutional tensions into drivers of cooperation and sustainability. However, this potential can only be realized if consultation and coordination mechanisms succeed in overcoming the dynamics of elite capture, donor dependency, and political discontinuity.

RECOMMENDATIONS

The results, when compared with existing theories, indicate that the hybrid governance model in Bobo-Dioulasso could become a strategic asset for environmental sustainability, provided its current weaknesses are overcome.

The proposed recommendations focus on five key areas.

Clarification of institutional and customary roles: Reducing overlapping mandates requires a local environmental governance charter, adopted by the municipality and endorsed by customary authorities. This document would define respective responsibilities (e.g., sanitation for the municipality, management of sacred sites for customary leaders) and establish mediation committees to resolve disputes. Monitoring could track the number of charters adopted and the rate of institutional conflicts resolved through mediation.

Strengthening financial autonomy: Project continuity depends on diversifying revenue sources. Beyond local taxation, introducing a targeted environmental levy (e.g., for waste management) and utilizing public-private partnerships (PPPs) for recycling or developing green sectors are realistic options within the Burkinabe budgetary framework. Potential performance indicators include the share of the municipal budget derived from local taxes, the amount of funding mobilized through PPPs, and the proportion of environmental expenditures covered by own-source revenue.

Institutionalization of indigenous knowledge: Customary practices must be recognized in municipal development plans through local natural resource management agreements. This integration would strengthen social ownership and the legitimacy of environmental policies and can be monitored via the number of agreements adopted, the proportion of projects incorporating customary knowledge, and the level of community satisfaction.

Social inclusion and broad participation: Youth and women's participation can be bolstered through regular citizens' forums and local digital platforms. These mechanisms broaden the scope of consultation and enable the diversity of stakeholders to be transformed into a strategic asset. Performance indicators could include the participation rates of youth and women and the number of citizen proposals incorporated into municipal plans.

Monitoring, evaluation, and emergent strategy: The credibility of actions relies on participatory monitoring and evaluation. Simple,

transparent indicators (e.g., waste collection rates, hectares reforested, citizen satisfaction) must be tracked regularly and adjusted based on results, in line with the logic of an emergent strategy.

CONCLUSION

The study conducted in Bobo-Dioulasso demonstrates that hybrid governance—far from being merely a source of conflict—can serve as a strategic resource for environmental sustainability in urban Africa. It highlights that territorial resilience depends on the ability of actors to transform institutional and financial constraints into organizational opportunities by integrating institutional and customary legitimacy, indigenous knowledge, and local innovations. By drawing on the work of Ostrom (commons and polycentricity), Freeman (stakeholders), and Mintzberg (emergent strategy), this study proposes the concept of a territorial resilience architecture: an adaptive system in which institutional tensions become levers for cooperation. This contribution is distinctive in showing that hybrid governance is not simply a coexistence of legitimacies but a situated construct capable of generating pragmatic solutions within contexts of incomplete decentralization. The recommendations formulated—clarification of roles, increased financial autonomy, institutionalization of indigenous knowledge, social inclusion, and participatory monitoring—gain added policy relevance when aligned with instruments already in use in Burkina Faso. They complement the National Economic and Social Development Plan (PNDES), which encourages local resource mobilization and citizen participation; they build upon the Environment Code and the Forestry Code, which provide a legal framework for integrating indigenous knowledge and formalizing local management agreements; and finally, they extend the General Code of Local Authorities (CGCT), which serves as a basis for clarifying the respective competencies of municipalities and customary authorities. Beyond the specific case of Bobo-Dioulasso, this research opens up new perspectives for African cities facing the challenges of rapid urbanization and

decentralization. It calls for rethinking environmental governance not as a transposition of international models, but as an architecture of territorial resilience—one rooted in local realities and linked to existing national instruments.

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Source of Financial Support: None.

Conflict of Interest: No conflict, declared.