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Barriers to Integration of Collaborative Governance in ESIA in Urban Development Projects-A Critical Review

Innocent Charles Omondi Akendo[1*], Bessy Kathambi[2] and Thuita Thenya[3]

Department of Environmental Sciences, Wangari Maathai Institute for Peace and Environmental Studies, University of Nairobi, Nairobi, Kenya

***Corresponding author:** Innocent Charles Omondi Akendo, Department of Environmental Sciences, Wangari Maathai Institute for Peace and Environmental Studies, University of Nairobi, Nairobi, Kenya; E-mail: chomondi@gmail.com

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Abstract

This review examines the barriers to integrating Collaborative Governance (CG) into Environmental and Social Impact Assessment (ESIA) within urban development projects, with a specific focus on Nairobi, Kenya. Rapid urbanization in Kenya, exemplified by Nairobi's growth, places significant pressure on resources and infrastructure, necessitating robust ESIA processes. However, only 10% to 15% of urban development projects in Nairobi fully implement CG in ESIA, leading to inadequate stakeholder engagement, limited transparency, and potential conflicts.

The study, guided by the PRISMA 2020 framework, systematically surveyed and analyzed relevant literature from 2018 to 2024 using Google Scholar. The findings indicate that 100% of selected studies identify CG implementation barriers, while 75% report institutional barriers and 58% report policy barriers. These barriers include inadequate legal frameworks, conflicting policy objectives, insufficient resources, poor coordination among government agencies, and power asymmetries. The review highlights how these challenges contribute to project delays, increased environmental degradation, and economic losses.

Despite increasing scholarly interest in CG in ESIA, significant obstacles remain in translating its principles into practice, often leading to a focus on autonomous consequences over relational ones. The review emphasizes the need for holistic solutions, stronger policy frameworks, improved institutional arrangements, and enhanced stakeholder participation to foster meaningful collaborative governance in urban development. Ultimately, addressing these barriers is crucial for achieving more sustainable and equitable urban development outcomes.

Keywords: Collaborative governance; Environmental and social impact assessment; Urban development; Policy barriers; Institutional barriers; CG implementation barriers; PRISMA Framework

Introduction

In Kenya, 60% of the population now lives in urban areas, with this figure expected to reach 70% by 2030 [1]. This population is living in urban residential areas either as tenants or on subdivided lands [2].

Kenya, with an urbanization rate of 4.2% per annum, has been struggling to provide adequate housing, infrastructure, and social amenities for its growing urban population [3]. Nairobi exemplifies this trend with a rapid expanding urban sprawl with an estimated population of over 5 million and an annual growth rate of 4% [4], leading to increased pressure on natural resources and urban infrastructure. This growth often results in significant environmental and social impacts, necessitating robust environmental and social impact assessment processes [5]. Nairobi's growth has been remarkable, spurred by interconnected factors, with land use analysis showing built-up areas increasing by an average of 1.49 km^2/year [6]. The notable environmental impact of this growth over the past decade, the number of mini-landfills and open waste sites on roadsides has doubled, indicating a severe strain on the city's waste management infrastructure [7].

Globally, urbanization poses both opportunities and challenges; cities drive economic growth but also face issues like inequality and climate change vulnerability [8]. Urban development projects, spanning extensive infrastructure networks, residential complexes, and dynamic commercial hubs, exert a significant influence on the urban ecosystem and the quality of life for city dwellers, with the potential to induce substantial shifts in air and water quality, biodiversity, and community well-being [9].

Currently, it is estimated that the percentage of urban development projects in Nairobi that fully implement the CG in ESIA is between 10% to 15%, leading to deficiencies that [10] terms inadequate stakeholder engagement, limited transparency, and potential conflicts among developers, local communities, and environmental agencies. For example, the construction of the Nairobi expressway faced significant opposition from local communities due to inadequate consultation during the ESIA phase, resulting in project delays and increased costs.

This is despite the fact that projects with strong stakeholder engagement are, on average, 30% more likely to achieve their sustainability goals [11]. Studies have shown that projects incorporating collaborative governance principles experience a 25% reduction in environmental conflicts and a 40% increase in community satisfaction [12].

The cost of neglecting collaborative governance in ESIA can be substantial, potentially manifesting as project delays due to legal challenges and community resistance, increased litigation expenses stemming from disputes over environmental impacts, and significant reputational damage affecting investor confidence and public trust [13]. Poorly managed construction sites contribute to a 15% increase in soil erosion and water pollution in affected areas; while lack of community involvement leads to an increase in project-related conflicts and delays by at least 20%.

Projects delayed due to social and environmental issues experience an average cost overrun of 10% to 15%. Stalled or poorly implemented urban development projects in Kenya, often due to inadequate stakeholder collaboration, represent a loss [14]. It is estimated that the lack of effective collaborative governance in ESIA contributes to a 15% increase in environmental degradation associated with urban projects annually. This includes increased pollution, habitat loss, and strain on water resources and that effective collaborative governance in ESIA processes can reduce these impacts by up to 40%.

Exclusion of marginalized communities from ESIA processes affects approximately 40% of Nairobi's urban population, leading to inequitable distribution of resources and increased social tensions [15].

While Kenya has a robust legal and regulatory framework for ESIA, including the Environmental Management and Coordination Act (EMCA) of 1999 and its subsequent amendments, the practical application and effectiveness of these regulations, particularly concerning collaborative governance, remain a challenge [16]. Effective implementation of collaborative governance in ESIA processes can lead to a 20% improvement in project outcomes, including reduced environmental impacts and enhanced social benefits.

For example, a recent assessment of ESIA implementation in urban areas of Kenya indicated that stakeholder consultation occurs in only an estimated 35% of development projects, and meaningful engagement, where stakeholder input genuinely influences project design, is even lower, at approximately 15% [17]. Furthermore, only 20% of ESIA reports adequately address socio-economic impacts, and even fewer, about 10%, incorporate indigenous knowledge or local ecological knowledge, sidelining critical community-specific insights. In about 70% of urban development projects, local communities report that their concerns raised during ESIA consultations are not adequately addressed in the final project design.

The challenge is intensified by the fact that less than 50% of ESIA regulations in Kenya explicitly mandate stakeholder engagement, resulting in processes that are largely top-down and technocratic [18]. Of the ESIA reports reviewed, only 30% demonstrated clear evidence of feedback loops, wherein community concerns were incorporated into project design modifications or mitigation measures, and less than 20% included provisions for ongoing monitoring and adaptive management based on community. Effective use of EIA, particularly on process-related issues, could significantly minimize adverse environmental effects. This policy gap contributes to a situation where only 25% of affected communities feel their concerns are adequately addressed during ESIA consultations and alarmingly, less than 15% express confidence that their input yields tangible influence on project outcomes, highlighting a critical imperative for reinforcing policy frameworks to foster genuinely inclusive and participatory ESIA processes in urban development [19]. Moreover, an over-reliance on standard environmental impact assessment practices that primarily function as reactive measures for conflict resolution further complicates the problem [20].

Conflicting policy objectives across government agencies undermine collaborative governance efforts, with an estimated 35% of projects facing conflicts between economic development priorities and environmental protection goals [21]. A fragmented institutional landscape reduces the effectiveness of collaborative efforts by an estimated 20% due to bureaucratic hurdles and conflicting priorities.

A study found that an average of 7 different government agencies are involved in the approval process for major urban development projects in Nairobi, with overlaps and inconsistencies in their mandates contributing to delays and a lack of a unified approach to ESIA and stakeholder engagement Fragmented governance structures result in unclear lines of accountability, with only an estimated 40% of ESIA reports clearly identifying the responsible parties for implementing mitigation measures and monitoring environmental impacts [22]. Overlaps and gaps in institutional mandates contribute to a lack of coordination and integrated planning, decreasing the effectiveness of collaborative governance in ESIA processes. Less than 60% of government agencies responsible for ESIA have adequate staffing and resources to effectively engage stakeholders.

Bureaucratic procedures and poor coordination among agencies contribute to delays and inefficiencies, with ESIA processes taking, on average, 18 months to complete, compared to an ideal timeframe of 12 months. These bureaucratic hurdles result in increased costs for developers and discourage investment in sustainable urban development practice [23]. Cumbersome approval processes and inconsistent enforcement of regulations further undermine the effectiveness of collaborative governance in ESIA, with less than 50% of approved ESIA reports undergoing regular monitoring and evaluation to ensure compliance with mitigation measures. Permitting processes are frequently inefficient [24].

Successful regulation is based on impartial evaluation and discussions with relevant subject matter expertise [25].

It is estimated that the budget allocated for stakeholder engagement in ESIA processes for urban development projects in Nairobi constitutes less than 5% of the total ESIA budget in approximately 70% of cases. Additionally, less than 30% of ESIA practitioners in Kenya receive formal training in collaborative governance techniques or participatory planning methods. Limited investment in capacity building hinders the development of essential skills among ESIA practitioners, impeding their ability to effectively facilitate stakeholder engagement and build consensus among diverse interest groups [26].

A survey that approximately 65% of residents in urban development project areas reported having limited or no access to information regarding the potential environmental and social impacts of these projects and the ESIA process [27]. The finding suggests that language barriers, technical jargon, and a lack of culturally appropriate communication strategies further exacerbate this challenge, particularly among marginalised communities.

Literature Review

The review paper follows the PRISMA 2020 framework to ensure a rigorous and transparent approach to surveying and analyzing relevant studies. The PRISMA 2020 framework consists of a detailed checklist outlining essential items for systematic reviews and meta-analyses, guiding the structured search, screening, eligibility assessment, and data extraction processes [28]. The search strategy involved utilizing relevant keywords and search terms related to collaborative governance, ESIA, and Urban development projects across Google Scholar database sources. The inclusion and exclusion criteria were defined to ensure that only relevant studies were included in the review.

Specifically, studies that explicitly address the barriers to collaborative governance in ESIA within the context of urban

development projects were included, while studies that focus solely on theoretical aspects of collaborative governance or ESIA without a specific urban development context were excluded. The data extraction process involved systematically collecting relevant information from the included studies.

Google Scholar year-wise results were eventually downloaded using Publish or Perish software version: 8.17.4863 (11th March 2025) and respective citations and referencing collected and organized using Zotero software version: 7.0.15 (16th March 2025). First, Publish or Perish software was used to identify key academic papers by analyzing citation metrics across databases ensuring research focus with relevant papers, then, the papers were stored, categorized and annotated within Zotero allowing for efficient reference management and organization.

Data synthesis involved a thematic analysis of the extracted data to identify common themes and patterns related to the barriers to collaborative governance in ESIA [29]. The findings from the review were presented in a clear and concise manner [30], highlighting the key barriers to collaborative governance in ESIA and providing recommendations for future research and practice

Table 1 below provides a breakdown of the inclusion and exclusion criteria based on the different stages and aspects of the literature review process discussed above. It highlights the interconnectedness of the methodological framework [31], the search strategy, eligibility focus and the requirements for data extraction and synthesis.

Element	Aspects	Specific criterion	Inclusion criteria	Exclusion criteria
Identification	Search strategy	Keywords and search terms	Studies utilizing relevant keywords and search terms related to "Collaborative governance," OR "Environmental and social impact assessment" AND "urban development projects".	Studies that do not utilize relevant keywords and search terms related to the core concepts of the research.
		Database and source diversity	Studies identified through searches across multiple academic databases and grey literature sources.	Records of studies repeated or duplicated, retracted articles/papers, and studies that were not accessible
		Studies screened by titles and abstracts		
Screening	Eligibility and focus	Core topic nexus	Studies that explicitly address the barriers to collaborative governance in ESIA within the context of urban development projects.	Studies that do not explicitly address the intersection of collaborative governance, ESIA, and urban development projects.
		Context specificity	Studies focusing on collaborative governance and ESIA specifically within an urban development context.	Studies focusing solely on theoretical aspects of collaborative governance or ESIA without a specific urban development context.
Included	Data extraction focus	**Identified barriers:** Specific barriers to collaborative governance in ESIA are identified and extracted.		
		Urban development project details: Information on the type and characteristics of the urban development project under consideration.		
		Proposed strategies: Proposed or discussed strategies for overcoming identified barriers to collaborative governance in ESIA.		

Table 1: Matrix of selection criteria for systematic literature review guided by PRISMA 2020 framework (Inclusion/Exclusion criteria).

The Google Scholar database search were restricted to 7 years ranging from 2018-2024. The period from 2018 onwards presents a phase of rapid urban expansion [32] necessitating effective ESIA and pronounced CG as a subject of academic inquiry. This helped to capture recent data on evolving barriers as they become more pressing with rapid urbanization and to improve integration of CG in ESIA for future urban development projects, especially in Nairobi.

The literature identification, screening and inclusion/exclusion process is illustrated in Figure 1 below.

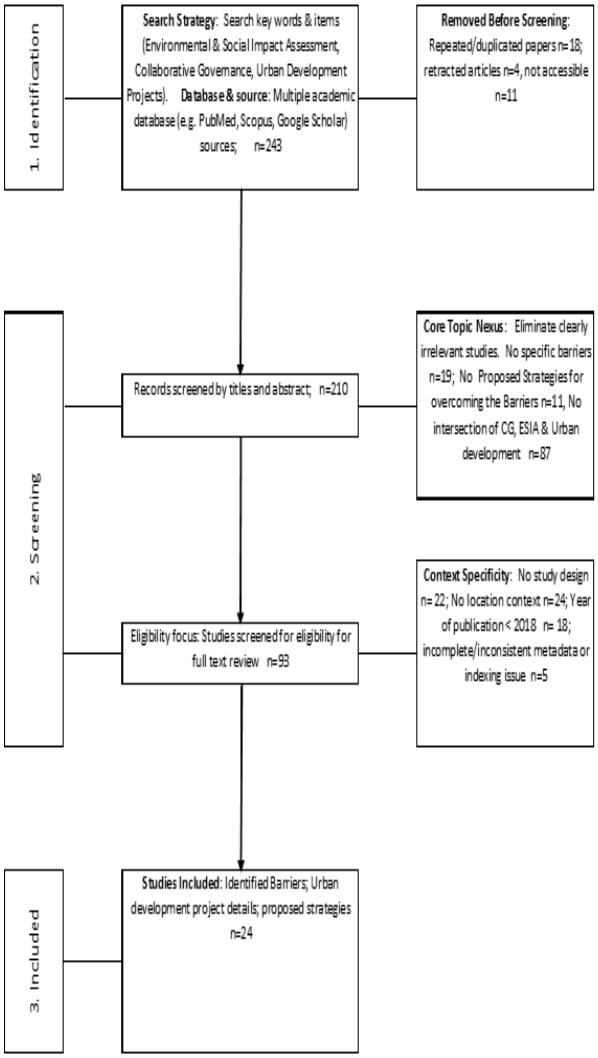

Figure 1: Process of selecting relevant literature using the PRISMA framework.

Research Rabit version was then used to process the references and identify citation relationships, generating visual map showing connections between papers (Figure 2), including co-authorship networks and citation trends of data for all targeted years. Microsoft Excel 2013 (Version 15.0.5589.1000) was then used to compile the data set and result for interpretation

After the above step, 24 articles were selected (listed in Table 2) to make the final sample of which all the 24 had CG Barriers, 18 of which had mentioned institutional barriers while 14 of which had mentioned policy barriers related to CG.

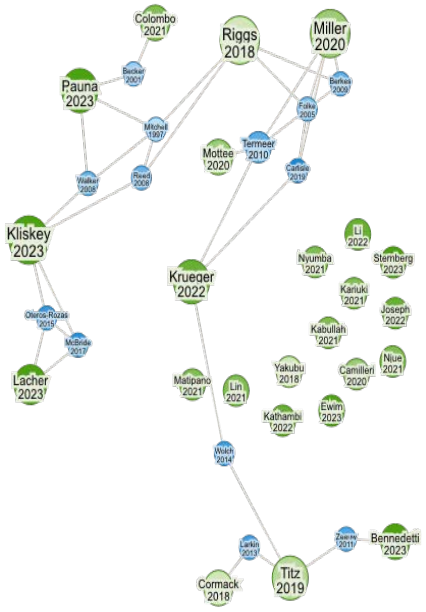

Figure 2: A network visualization of literature review studies by authors. The figure shows influential pathways (connectedness) and emerging or novel trends (un-connectedness) of studies by involved authors in shaping research that support "CG" OR "ESIA" AND "UDP". The green balloons in the figure represents authors of selected studies while the blue balloons represent earlier interaction (authors) with selected authors.

Results

Figure 3a presents an analysis of the data pertaining to the prevalence of barriers to Collaborative Governance (CG) in Environmental and Social Impact Assessment (ESIA) within urban development projects. The data postulates a scenario where 100% of selected studies identify CG implementation barriers, while 58% and 75% of which report policy and institutional barriers that also affect CG. The data emphasizes the universality of CG implementation barriers, while simultaneously addressing the policy and institutional contexts that shape them. Inadequate legal frameworks or conflicting policy objectives (policy barriers) may lead to a lack of clear guidelines for stakeholder engagement, resulting in poor implementation of participatory processes. Similarly, insufficient resources or poor coordination among government agencies (institutional barriers) can hinder effective communication, conflict resolution, and monitoring of collaborative governance initiatives. While addressing CG implementation barriers becomes a priority, there should emphasize the need for holistic solutions such as effective strategies to address the interconnectedness of policy, institutional, and implementation challenges to foster meaningful collaborative governance in ESIA.

Figure 3b reveals a fluctuating, yet generally increasing, trend in the number of publications, with the period from 2018 to 2020 showing a relatively low and stable number of publications (3 in 2018, 1 in 2019, and 3 in 2020) indicating an initial phase of exploration and

problem identification in the research area. A notable increase in publication output is observed in 2021 (7 publications) and sustained in 2023 (7 publications), with a slight dip in 2022 (4 publications). This surge suggests a growing recognition of the importance of CG in ESIA within urban development and an intensified effort to investigate the associated barriers. This increased research output may be a direct response to the persistent challenges of putting CG principles into practice.

These influential 2018 publications might have been instrumental in highlighting the universality of CG implementation barriers or in providing foundational analyses of policy and institutional obstacles.

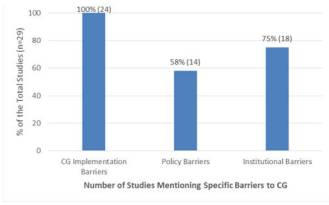

Figure 3a

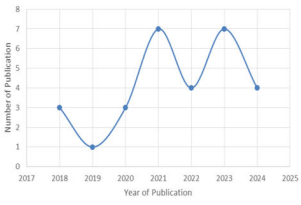

Figure 3b

Figure 3: a) Prevalence of CG implementation, policy, and institutional barriers in reviewed literature; b) Annual no. of publications related to barriers to "CG" OR "ESIA" AND "UDP" for the year 2018-2024.

The citation data in Figure 4a reveals a dynamic pattern of scholarly influence. The year 2018 shows a relatively high number of citations (150). This suggests that early publications in this period had a notable impact on subsequent research. Considering Figure 2b's indication of an initial phase of exploration (with 3 publications in 2018), these early studies likely played a crucial role in framing the key challenges and setting the stage for further investigation. Following 2018, there is a marked decline in citations in 2019 (60) and 2021 (67), with an increase in 2020 (274) and 2022 (83). The lower citation counts in 2019 and 2021 suggest a period where the field was still developing. Given Figure 3b's data, which shows fewer publications in 2019, the lower citations in that year could be directly related to the lower volume of research.

The significant spike in citations in 2020 (274) is particularly noteworthy. This could indicate the publication of seminal paper that had a substantial influence on the field. This highly cited study offered novel insights into the interplay between CG implementation barriers, policy constraints, and institutional weaknesses (as highlighted in Figure 4a), and proposed innovative solutions. It's worth noting that Figure 3b also shows a moderate number of publications in 2020 (3), so the high citations are not solely driven by publication volume.

The increase in citations in 2022 (83), while not as high as 2020, suggests a continued interest and engagement with the research area. This could reflect a broadening of research focus or the emergence of new sub-topics within the study of CG barriers. The data shows a moderate increase in citations in 2023 (110) that aligns with Figure 3b's trend of higher publication output in that year.

The data in Figure 4b demonstrates a clear upward trend, indicating a continuous accumulation of citations over the years. The consistently increasing cumulative citations in Figure 4b strongly emphasize the enduring relevance of the barriers identified in Figure 3a. The fact that research related to CG implementation barriers, policy constraints, and institutional weaknesses in CG continues to be cited year after year underscores the ongoing need to address these challenges in urban development project practices. The trends in publication output (Figure 3b) directly influence the cumulative citation counts (Figure 4b). The growth phase in publications from 2021 onwards contributes to the accelerated accumulation of citations, as more research provides a larger foundation for subsequent work.

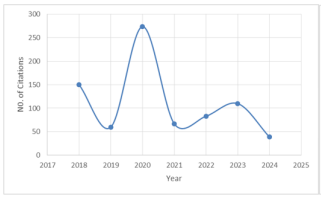

Figure 4a

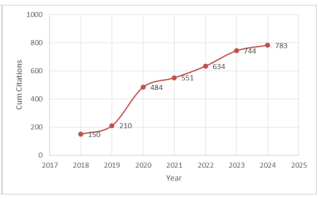

Figure 4b

Figure 4: a) No. of citations per year for Google Scholar; b) Cumulative citations p.a. for Google Scholar.

Table 2 presents the characteristics of the publications selected for the systematic literature review. It singles out how the identified barriers and proposed strategies vary across different geographic locations and types of urban development projects hence serves as a bridge between the quantitative overview provided by the Figures 3a, 3b, 4a and 4b and the qualitative depth of the individual research studies, offering a more complete and insightful synthesis of the literature on barriers to collaborative governance in ESIA within urban development projects.

Authors	Title	Year	Study design	Geographic location	Type of urban development project	Elements of ESIA/ Collaborative Governance (CG)	Specific barriers to CG (Policy/ institutional /CG implementation barriers)	Proposed strategies for overcoming the barriers	No. of citations for Google Scholar search (11 May 2025)
Bennedetti et al.	Challenges to promote sustainability in urban agriculture models: A review	2023	Systematic review	Global North and Global South	Urban agriculture initiatives	UA as a tool to promote sustainability	Socio-economic and environmental contextual factors in cities	Development of a model adaptable to different contexts; addressing social	2

								issues in relation to environmental ones	
Bhatt	Environmental impact assessment system and process in developing countries	2023	Literature review	Developing countries (focus on South Asia)	Development projects	EIA systems and processes		Improving EIA systems through public participation, impact coverage, scientific mitigation, etc.	3
Camilleri	European environment policy for the circular economy: Implications for business and industry stakeholders	2020	Systematic review	European Union	Circular economy initiatives	Circular economy policies and their implications for stakeholders	Challenges in the transition to circular economy practices	Policy recommend ations and stakeholder engagement to facilitate the circular economy	232
Colombo et al.	Co-producing a social impact assessment with affected communities: Evaluating the Social sustainability of redevelopment schemes	2021	Participatory action research, case study	South Kilburn Estate, London, UK	Council estate redevelopment	Co-production of SIA with affected communities	Lack of community involvement in the planning process, insufficient consideration of social impacts	Co-producing SIAs with affected communities, giving value to local knowledge	9
Cormack and Kurewa	The changing value of land in Northern Kenya: The case of Lake Turkana wind power	2018	Ethnographic research	Marsabit County, Kenya	Wind power project	Social and environment al impacts of infrastructure development	Power inequalities, competing land claims, lack of consultation	Addressing local populations' knowledge about development projects	71
Delgado-Baena and Sianes	Power dynamics in collaborative governance processes: A case study of a disadvantaged neighbourhood in Southern Spain	2024	Case study, systematiza tion of experiences	Las Palmeras, Córdoba, Spain	Urban regeneration	Collaborative governance, power dynamics, stakeholder interaction	Power asymmetries, lack of citizen autonomy, limited accountability	Promoting citizen autonomy, self-regulation, co-managed agendas, and accountability	6
Ewim et al.	Survey of wastewater issues due	2023	Secondary data analysis	Nigeria (Niger Delta)	Oil and gas industry	Policies and regulations related to oil	Inadequate enforcement; Weak	Strengthen enforcement; Increase	54

	to oil spills and pollution in the Niger delta area of Nigeria: A secondary data analysis					production and waste management	penalties; Lack of coordination among agencies	penalties; Improve coordination among agencies	
Ichsan Kabullah et al.	Dysfunction of collaborative governance in the Handling policy of COVID-19 at Jambi Province	2021	Case study	Indonesia (Jambi Province)	COVID-19 pandemic response	Collaborative governance	Local governments are slow and bureaucratic ; Lack of transparency; Elites exploit the situation for political gain	Promote community movements and strengthen collaboration between civil society organizations	3
Joseph and Mwangi	Influence of gender equality in the management committee on community-led monitoring of borehole water projects	2022	Case study	Kenya (Meru County)	Borehole water project	Gender equality in project management	Gender-based discrimination	Educate community members about gender discrimination; Implement affirmative action policies	1
Kariuki and Kuria	Coal-key energy resource for the future in Kenya? A review	2021	Review	Kenya	Coal mining	Sustainable coal mining	Lack of finances, lack of technology, poor conditions of the physical environment, and unsupportive laws and regulations	Adequate ways and technologies that can be adapted in Kenya for sustainable coal mining	3
Kathambi and Ogutu	Effects of institutional framework lapses in solid waste management-A case of Ngomongo, Nairobi, Kenya	2022	Mixed method	Nairobi, Kenya; Ngomongo	Solid waste management	Institutional frameworks for solid waste management	Lapses in institutional frameworks	Proper solid waste management	4
Kliskey et al.	Building trust, building futures: Knowledge co-production as relationship, design, and process in transdisciplinary	2023	Case-study of a mid-size river basin	United States	Food-energy-water systems	Knowledge co-production process for food-energy-water systems	Researchers alone cannot produce the knowledge necessary to develop solutions to the vexing problems of sustaining food,	Community expertise is needed to allow researchers to reassess invalid assumptions and misconceptions about local system	16

	science						energy, and water systems in concert; this requires consideration of the context in which these FEWS interplay with people and communities	interactions and effective solutions	
Krueger et al.	Governing sustainable transformations of urban social-ecological-technological systems	2022	Review	Amsterdam, The Netherlands	Urban areas	Governance of urban sustainability transformations	Coordination across complex and interdependent urban systems requires adequate forms of governance	Adequate frameworks and guidelines for how to govern such systems	61
Lacher et al.	Modeling alternative future scenarios for direct application in land use and conservation planning	2023	Land change model	Northwestern Virginia	Land use and conservation planning	Integrating community-developed visions of the future with land change models	Land use change, such as urbanization, agriculture, and deforestation	Strategic land use planning efforts that balance the social, economic, and environmental needs of society and the ecosystems that support it	6
Li et al.	What Is the mechanism of government green development behavior considering multi-agent interaction? A meta-analysis	2022	Meta-analysis	China	Government green development	Government green development behavior	The mechanism of government green development behavior is still unclear	Government to improve their environmental systems and environmental supervision	17
Lin and Xia	Research on cooperative protection mechanism of ecological environment	2021	Literature analysis	Wuhan, China	Ecological environment protection	Collaborative governance of the ecological environment	Failure to establish the concept of coordinated ecological environment management; The cooperative governance system of the cooperative main body has not been	Firmly establish the concept of collaborative governance; Integrating multiple forces, co-governing and protecting the ecological environment; Improve	2

							established; The cooperative governance operation mechanism is not sound; Eco-environmental coordination facilities are not high	the coordinated governance mechanism of the ecological environment; Improve the level of facilities for coordinated ecological environment management	
Matipano and Khumalo	Enhanced shared governance improves the collaborative management of protected areas in Zimbabwe	2021	Three-case study (qualitative, inductive, descriptive, and exploratory)	Zimbabwe	Management of protected areas	Shared governance in partnership-managed protected areas	Instability and pitfalls in early stages of partnerships; Lack of guiding frameworks and capacity building; Exclusion of community participation; Disregard for traditional and cultural sites	Develop guiding frameworks and build capacity; Recognize traditional and cultural sites and develop governance types for them; Community participation	0
Miller et al.	Stakeholder engagement in the governance of marine migratory species barriers and building blocks	2020	Interviews and focus group	Eastern Australia	Governance of marine migratory species	Stakeholder engagement in environmental governance	Barriers in decision-making processes, information sharing, institutional structures, and participatory processes	New information pathways, reformed institutional structures, and improved participatory mechanisms	14
Mottee et al.	Reflecting on how social impacts are considered in transport infrastructure project planning: Looking beyond the claimed success of Sydney's South West rail link	2020	Case study	Sydney, Australia	Urban rail transport megaproject	ESIA, EIA follow-up	Practice challenges and governance barriers to applying ESIA and its follow-up across spatial scales; Tension between metropolitan -scale planning objectives and consequences for local communities; Conflicts around accountability	Improvements in urban governance and project evaluation; Greater emphasis on follow-up and monitoring against social goals; More equitable and adaptive approach to integrated urban and transport development; Effective EIA follow-up process at the micro	28

								and macro level	
Namuma et al.	Toward sustainable implementation of geothermal energy projects– The case of Olkaria IV project in Kenya	2023	Case study	Kenya	Geothermal energy project	Conflict management; Mediation	Environmental conflicts; Community resistance; Bureaucracy	Mediation as a sustainable environmental conflict management strategy; Adequate public participation	6
Njue et al.	Implementation, stakeholders participation and sustainability of public projects in Kenya a conceptual framework	2021	Conceptual framework	Kenya	Public projects	Stakeholders participation; Project implementation; Project sustainability	Changing stakeholders need and interest; Poor implementation decisions	Participatory review of projects; Collaborative sustainability decision making	12
Nurkaidah et al.	Implementation of environmental policies on the development of a new capital city in Indonesia	2024	Qualitative (thematic analysis)	Indonesia	Development of a new capital city	Implementation of environmental policies	Complex challenges, including coordination between institutions and stakeholders	Implementing accommodative and adaptive policies; Routine monitoring and evaluation; Close collaboration between the government and stakeholders; Increasing public education efforts and environmental awareness	19
Nyumba et al.	Assessing the ecological impacts of transportation infrastructure development: A reconnaissance study of the standard gauge railway in Kenya	2021	Reconnaissance study	Kenya	Transportation infrastructure developmen (railway)	Ecological impacts of transportation infrastructure development	Ecosystem degradation, fragmentation and destruction	Develop sustainable and ecologically sensitive measures to mitigate the key ecosystem impacts	38
Pauna et al.	The role of governmental	2023	Case study	Northern Europe	Mining project	Governmental	Uncertainty of project	Early engagement;	20

	stakeholder engagement in the sustainability of industrial engineering projects					stakeholder engagement: Collaborative engagement practices	goals; Lack of mutual understanding; Limited integration of planning and permitting processes; Problems in choosing optimal design solutions	Continuous engagement; Informal engagement; Engagement technological issues	
Riggs et al.	Governance challenges in an Eastern Indonesian forest landscape	2018	Case study	East Lombok, Indonesia	Forest management	Landscape governance; Multi-level governance	Ambiguity, competition and conflict between different levels of government; Lack of effective collaboration; Lack of capacity	Effective collaboration in multi-level governance; Implementation of the recommendation to use a staged integrated impact assessment	60
Sternberg and Ahearn	Mongolian mining engagement with SIA and ESG initiatives	2024	Case study	Mongolia	Mining projects	ESG; Social Impact Assessment (SIA)	Weak national engagement with ESG; Absence of SIA legislation; Lack of transparency	Improve governance processes; Effective EIA follow-up process at the micro and macro level	14
Titz and Chiotha	Pathways for sustainable and inclusive cities in Southern and Eastern Africa through urban green infrastructure?	2019	Literature review	Southern and Eastern Africa	Urban development	Urban green infrastructure; Climate change adaptation	Rapid and dynamic development; Lack of capacity; Focus on western urban perspective	Adaptive approach to integrated urban and transport development; Improve governance processes to prevent barriers and challenges	60
Yakubu	Delivering environmental justice through environmental impact assessment in the United States: The case of New Mexico	2018	N/A	USA (New Mexico)	Oil and gas development	Environmental Justice (EJ); Public Participation (PP); Environmental Impact Assessment (EIA)	Mismatches between levels of government: Assessments that focus on future populations; Lack of effective EIA follow-up	Effective EIA follow-up process at the micro and macro level; Adopting a more equitable and adaptive approach to integrated urban and transport development	19

Table 2: Characteristics of publications selected for systematic literature review and proposed solutions to CG barriers.

Discussions

Collaborative governance in ESIA studies

A growing number of informative studies on collaborative governance in ESIA have been undertaken globally, including in Kenya. The increasing interest in the subject is associated with the growing recognition that urban areas, especially in rapidly urbanizing regions, face significant environmental and social impacts, necessitating effective ESIA and collaborative governance, compared to other areas where urban development may be less intense or well-managed.

The geographical distribution of the studies included in this review reveals a diverse range of urban development contexts, spanning both Global North and Global South regions [33]. While some studies adopt a broader focus, examining developing countries or regions like Southern and Eastern Africa [34], others delve into specific urban areas, such as Nairobi, Kenya; Ngomongo [35], various locations within Kenya, and cities like Amsterdam, The Netherlands, and Wuhan, China [36]. This geographical diversity underscores the global relevance of collaborative governance challenges in ESIA, as urban development projects worldwide grapple with similar issues related to stakeholder engagement, policy frameworks, and institutional coordination.

Challenges in integrating collaborative governance significantly impact ESIA implementation and project outcomes in urban areas. In Kenya, poor delivery of government projects has been attributed to inadequate stakeholder participation-reflected in limited engagement due to policy gaps, where Njue et al. indicate less than 50% of ESIA regulations explicitly mandate stakeholder involvement, leading to top-down, technocratic processes. As a result, a significant proportion of local communities perceive that their concerns are not adequately addressed, highlighting the need for stronger policy frameworks and more participatory ESIA processes in urban development.

The above challenges are mirrored in urban development projects globally, such as in European Union countries where circular economy initiatives face challenges in stakeholder engagement, as documented by Camilleri. Similarly, in urban areas like Las Palmeras, Córdoba, Spain, Delgado-Baena and Sianes have documented power asymmetries and limited accountability in collaborative governance processes. In Nairobi, Kenya, studies show that poor coordination among agencies and inadequate resources hinder effective stakeholder engagement in ESIA, as evidenced by Kathambi and Ogutu and other research. Stakeholder involvement was closely linked with project success and community satisfaction especially with projects that employed collaborative governance principles.

A large section of the ESIA research focuses on specific barriers, with policy, institutional, and CG implementation barriers attracting significant attention. Studies on the challenges of stakeholder engagement are also common in urban development contexts. For example, several studies in the review highlight how inadequate legal frameworks and poor coordination among government agencies hinder effective communication and conflict resolution–including power dynamics [37], lack of transparency [38], and limited community involvement [39]. The findings in most of the above studies reveal that the lack of effective collaborative governance in ESIA contributes to adverse environmental and social outcomes and is projected to continue without increased effort to address the identified barriers and promote more inclusive and participatory processes.

The literature review indicates that research interest has focused on the various negative consequences associated with inadequate collaborative governance in urban development projects, particularly in Nairobi, Kenya. These include studies on project delays due to legal challenges and community resistance [40], increased environmental degradation [41], and economic losses from stalled projects [42]. Similar negative consequences have been observed in other urban contexts globally [43].

It is quite clear from the available literature that most studies on ESIA in urban development have concentrated on the direct consequences of poor governance without fully considering the indirect consequences. This is evident from the trends observed in Google Scholar sources. For example, [44] notes the reputational damage affecting investor confidence and public trust, which represents a less tangible but significant negative consequence. These indirect negative consequences can sometimes outweigh the direct impacts. For instance, ineffective stakeholder engagement can lead to long-term social tensions and a breakdown of trust, making future development more difficult. In Nairobi, poor solid waste management due to institutional lapses [45] illustrates how governance failures create ongoing environmental and social burdens.

The existing legal and regulatory frameworks, such as the Environmental Management and Coordination Act (EMCA) in Kenya, aim to ensure effective ESIA. However, challenges remain in their implementation. While direct negative consequences like project delays and environmental damage are often addressed, indirect negative consequences like social inequity and loss of trust are less systematically accounted for. For instance, exclusion of marginalized communities from ESIA processes [46] results in inequitable resource distribution and increased social tensions. Therefore, a comprehensive approach is needed to evaluate the full spectrum of consequences associated with collaborative governance in urban development.

Dynamics of collaborative governance and its potential in urban ESIA

Across the globe, urban centers are experiencing rapid transformations, leading to a complex interplay of various stakeholders within development projects. This dynamism shapes the way collaborative governance is both envisioned and practiced. The situation highlights the need for inclusive processes, especially within critical tools like ESIA, to navigate the diverse interests and values at play [47].

Studies emphasize the stakeholder interaction in urban settings (e.g., Delgado-Baena and Sianes). For instance, research illustrates the importance of understanding power dynamics to foster more equitable participation; the insights underscore that collaborative governance is not merely a procedural exercise but a deeply social one. Unlike more clearly bounded contexts, urban development often involves overlapping jurisdictions and fluid community boundaries, requiring governance approaches that are adaptive and context-sensitive [48].

It's clear from the literature that effective collaborative governance requires more than simply ticking boxes for "stakeholder engagement." The review reveals a need to move beyond traditional models and embrace innovative strategies. Scholars like Colombo et al. advocate for co-production of knowledge, where local expertise is valued alongside technical assessments. This shift towards more relational and iterative forms of governance is essential for creating development outcomes that resonate with the needs and aspirations of

urban dwellers. While urban development holds immense potential for progress, realizing its positive dimension's hinges on how well governance mechanisms facilitate collaboration. For example, inclusive planning processes can be a powerful force for building social cohesion and enhancing a sense of place. It is therefore important to consider collaborative governance as a creative endeavor, one that seeks to foster synergy and shared ownership among all participants.

The evolution of governance frameworks, such as the Environmental Management and Coordination Act (EMCA) in Kenya, reflects an ongoing effort to incorporate collaborative principles. However, the core challenge lies in translating these frameworks into practices that truly empower stakeholders. While formal structures provide a foundation, the ultimate success of collaborative governance depends on nurturing a culture of dialogue, mutual respect, and shared vision. For example, research by Ulibarrí et al. points to the value of building trust through transparent communication and ongoing feedback loops.

The rapid transformation of urban centers worldwide creates a dynamic field of interaction among diverse stakeholders in development projects. This dynamism shapes both the vision and practice of collaborative governance. To navigate the varied interests and values effectively, inclusive processes within ESIA is essential for effective collaboration beyond simple procedural steps; it fosters a deeper understanding of the complex social fabric-flexible to specific contexts-of urban communities. This shift towards more relational and iterative governance can lead to development outcomes that better align with the needs and aspirations of urban residents.

Policy and institutional barriers as drivers of CG in ESIA

The significant presence of policy and institutional barriers plays a crucial role in shaping the direction and emphasis on Collaborative Governance (CG) within ESIA for urban development projects. The review reveals that a substantial number of studies highlight the impact of inadequate legal frameworks and poor institutional coordination on the effectiveness of CG implementation.

Nurkaidah et al. highlight that the implementation of environmental policies faces challenges in coordination between institutions and stakeholders; while Matipano and Khumalo emphasize the need to develop guiding frameworks and build capacity that eliminates governance vacuum from the early stages of the partnerships-as a solution. Nyumba et al. also point out that in Kenya, despite ESIA, "the persistence and emergence of potential ecological impacts coupled with the likely ineffectiveness of mitigation measures... point to challenges with public participation and little oversight both in the ESIA process and implementation of the development projects".

This focus is evident in the increasing number of publications (75% on institutional barriers and 58%on policy barriers of the selected studies) dedicated to exploring how these barriers contribute to the challenges of achieving meaningful collaboration among stakeholders. Specifically, studies investigated how conflicting policy objectives across government agencies and fragmented institutional landscapes hinder collaborative governance efforts. For instance, Ulibarrí et al. is one of the studies included in this review that highlight how the lack of clear guidelines for stakeholder engagement due to policy gaps and bureaucratic hurdles within approval processes impede the integration of CG principles.

Furthermore, the fluctuations in citation counts can reflect the evolving scholarly attention to policy and institutional barriers. For instance, researchers such as Namuma et al. provide critical analyses of how these barriers impede CG implementation and propose strategies to mitigate their effects. In addition, Sternberg and Ahearn highlight that despite well intentioned schemes promoting ESG and SIA, they "may translate poorly in situ in developing countries" due to limited relevance to daily lives and lack of governmental commitment. Indeed, Joseph and Mwangi found that despite policies to promote gender equality in community led monitoring of borehole water projects, including environmental aspects, women's participation in community development remains inhibited by systemic barriers like policies and procedures at the county level. Lacher et al. also state that despite the advancements in land change models, "in order for the resulting model products to be useful to planners, policy makers, and conservationists, they must be focused on addressing questions of relevance to the community they intend to serve".

The growth in publication output observed in recent years (Figure 3b) can be attributed, in part, to the ongoing need to address these persistent challenges. As the review indicates, the sustained scholarly interest, demonstrated by cumulative citation data (Figure 4b), underscores the importance of translating research findings into actionable policy changes and institutional reforms to foster more effective collaborative governance in urban development as supported by researchers such as Kathambi and Ogutu, Krueger et al., Titz and Chiotha. Indeed, Njue et al. conclude that "implementation of public projects is often hampered by rigid bureaucracies that often edge out good opportunities for public and stakeholders to contribute to sustainable decisions". Whereas Camilleri asserts that "these unsustainable practices are triggering significant changes in our natural environment and biospheres, with catastrophic consequences for human life".

Conclusion

The review of previous studies reveals a notable focus on collaborative governance in ESIA, yet it also uncovers persistent challenges, particularly concerning policy and institutional barriers, within urban development projects. It is essential to determine how these barriers impede the effective integration of collaborative governance and to identify strategies to overcome them. Another area that requires attention is the development of robust frameworks and mechanisms to promote more inclusive and participatory ESIA processes. This necessity arises from the observation that current practices often fall short in ensuring meaningful stakeholder engagement and equitable decision-making by focusing on autonomous consequences while ignoring relational consequences.

Although there is a growing recognition of the importance of collaborative governance in urban development, as evidenced by the increasing number of publications on the topic, the implementation of its principles faces significant obstacles. It is still difficult to fully integrate collaborative governance due to policy gaps, institutional weaknesses, and implementation challenges. The poor understanding and inadequate addressing of these barriers undermine the potential of ESIA to contribute to sustainable and equitable urban development.

It is recommended from the findings of this review that future research and practice should prioritize addressing the identified policy, institutional, and collaborative governance implementation barriers.

To achieve this, the following pertinent questions should be considered:

- What are the most effective strategies for integrating collaborative governance principles into ESIA processes for different types of urban development projects?
- How can policy frameworks and institutional arrangements be strengthened to foster more inclusive and participatory decision-making in urban development?

The answers to these questions will inform the development of guidelines and best practices for promoting collaborative governance in ESIA, ultimately contributing to more sustainable and equitable urban development outcomes.

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