Collaborative Governance for Sustainable Development in Nepal: Lessons from Large-Scale Infrastructure Projects

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Abstract

This study investigates the role of collaborative governance in promoting sustainable development in Nepal by analyzing two large-scale infrastructure projects: a prominent hydropower company and a major water supply project. Using thematic analysis, the study involved coding, categorization, and theme identification through twelve interviews with key stakeholders. The findings highlight significant gaps in the governance structures of these projects, particularly in terms of resilience, equality, and well-being. Despite achieving technical success, both projects failed to adequately address broader social and environmental goals, leading to the marginalization of local communities and a decline in their well-being. The study is limited to these two projects and does not account for governance frameworks in other sectors or smaller-scale projects. Future research could expand by studying additional infrastructure projects or comparing governance practices in similar economies, thereby enhancing the potential to generalize the findings. The study addresses equity and inclusivity in collaborative governance for infrastructure development a relatively underexplored area in Nepal, emphasizing the importance of inclusive and equitable governance frameworks to achieve sustainable growth in underdeveloped economies.

Keywords: Collaborative governance, equality, resilience, SDGs, well-being

Introduction

In the face of increasing global challenges such as climate change, social inequality, and economic instability, the urgency for sustainable development has never been greater (Ahmed et al., 2022; Paoli, 2024; McNaught, 2024). Sustainable development aims to meet the needs of the present while ensuring future generations can thrive in a stable and healthy environment (Emina, 2021). Achieving this goal is closely tied to governance, which coordinates efforts across various sectors. Major global frameworks, such as the Sustainable Development Goals (SDGs), impose significant expectations on governance actors to collaborate effectively (McNaught, 2024). Despite widespread acknowledgment of the need for collaborative governance, challenges remain in implementing integrated approaches that foster resilience, equality, and well-being in development initiatives (Head, 2022; Guluma, 2021; Nisa Nipa & Hasan, 2023).

Traditional governance mechanisms have struggled to effectively address global issues like poverty, corruption, and security, which has led to declining confidence in government capabilities and the rise of alternative governance structures (Lima, 2021). Multistakeholder initiatives, public-private partnerships (PPPs), and cross-sector collaborations now play crucial roles in development. However, the integration of these efforts to achieve sustainable outcomes remains inconsistent (Florini & Pauli, 2018). In Nepal, this governance gap is particularly evident in large-scale infrastructure projects, where the broader social and environmental goals are often overlooked despite technical success. This study aims to address this gap by investigating the role of collaborative governance in sustainable development, focusing on two major infrastructure projects: a prominent hydropower company and a large-scale water supply project. This study offers insights into equity and inclusivity in collaborative governance for infrastructure development, a relatively underexplored area in Nepal. By analyzing these projects, the research highlights the significant gaps in governance structures, particularly concerning resilience, equality, and the well-being of local communities.

This study is organized into seven sections. Section 1 provides an introduction to the study, outlining its objectives and significance. Section 2 presents a review of the literature. Section 3 explains the research methods used. Section 4 discusses the results and provides an analysis. Section 5 offers the study's discussions. Section 6 deals with conclusions and implications. Finally, section 7 ends with limitations and future research.

Literature Review

Collaborative Governance

Multi-stakeholder collaboration is regarded as a potentially vital tool for tackling the complex and super-wicked problems of sustainability and sustainable development (Mariani et al., 2022). Sustainability focuses on meeting present needs without compromising the well-being of future generations (Adams, 2006). Lately, collaborative governance has emerged as

a critical concept in addressing the complexities of sustainable development. This governance model emphasizes political efforts to achieve sustainability transformation by creating joint ventures that connect various representatives from different interest groups (Beyers, 2024). At its core, it involves pooling resources from multiple stakeholders, including businesses, governments, and civil society, working together to realize projects and achieve shared objectives (Ansell & Gash, 2008; Vazquez-Brust et al., 2020). Collaborative governance is a way organizations work together by following agreed rules to ensure fairness and trust in decision-making (Wang & Ran, 2021), where power is often asymmetrical (Schommer & Guerzovich, 2023). It involves the decision-making process for delivering public services founded on normative principles such as trust, power-sharing, diversity, consensus, inclusiveness, deliberation, and equality (Wang & Ran, 2021; Provan & Kenis, 2008).

Collaborative governance is frequently regarded as an effective strategy for tackling complex public issues due to its potential to enhance government accountability, strengthen governance capabilities, facilitate better technology development and transfer, broaden democratic involvement, and co-create public value (Rogers & Weber, 2010; Johnston et al., 2011; Qi & Ran, 2023). Theories of collaborative governance emphasize the importance of building trust, fostering open communication, and creating mechanisms for joint decision-making (Brunet et al., 2023). These theories suggest businesses and governments can pool resources, share expertise, and co-create innovative solutions to sustainability challenges when engaging in meaningful partnerships. This approach is particularly relevant in sustainability, where the interdependence of economic, social, and environmental factors requires coordinated efforts across sectors.

Governance interactions can be designed to improve resilience, equality, and the well-being of people and the planet by fostering inclusive decision-making that involves diverse stakeholders, ensuring that all perspectives are considered (Prysmakova-Rivera & Pysmenna, 2021; Kalogiannidis et al., 2023). Resilience is the ability to prepare for, absorb, recover from, and adapt to challenges and shocks (Lam et al., 2016; Assarkhaniki et al., 2023). Some literature views resilience as a component of sustainability, highlighting the interconnectedness of these concepts (Roostaie et al., 2019). To prevent distrust and conflicts, equity and equality should guide the collaboration cost for each member, as the legitimacy of the process relies on stakeholders feeling that their concerns have been fairly considered (Tonelli et al., 2018; Shrestha, 2012; Ansell & Gash, 2008). Human well-being is central to sustainable development planning, emphasizing the needs of the poorest and most vulnerable while considering the planet, prosperity, peace, and global partnerships (Nocca, 2017). A community with a high level of well-being enjoys various benefits important to individuals' ability to realize their full potential. Governance is increasingly acknowledged as a key factor in shaping well-being (Graham et al., 2003).

Collaborative Governance and Sustainability

Collaborative frameworks that bring together governments, businesses, civil society, and international organizations are essential for creating solutions that are resilient and aligned with shared sustainability goals (Melo, 2018). Transparency and accountability in governance build trust and promote responsible behavior, ensuring that resources are distributed equitably (Akhtar et al., 2016). Additionally, adaptive policies and regulations allow governance systems to respond effectively to emerging challenges, such as climate change and economic crises. Integrating sustainable development principles into governance ensures a balance between economic, social, and environmental factors, protecting natural resources and promoting well-being for current and future generations (Mensah & Casadevall, 2019). By leveraging data-driven decision-making and empowering communities through capacity building, governance systems can be more resilient, equitable, and capable of addressing the complex needs of both people and the planet(Bibri et al., 2024; Akter et al., 2024).

By integrating business and government strategies, Nepal can build resilience against economic shocks, natural disasters, and social upheavals, ensuring that communities are better equipped to withstand and recover from adversities. Collaborative efforts also play a pivotal role in promoting equality by creating inclusive policies that address the needs of marginalized populations, reducing disparities, and ensuring equitable access to resources and opportunities. Furthermore, the well-being of citizens is enhanced through partnerships that prioritize health, education, and social services, fostering a holistic approach to development that balances economic growth with social and environmental sustainability (Hariram et al., 2023). Through these collaborative governance mechanisms, Nepal can create a more resilient, equitable, and prosperous society, aligning with the broader goals of sustainable development.

The literature on business-government interactions highlights several frameworks through which these collaborations can take place, including PPPs, Corporate Social Responsibility (CSR) initiatives, and regulatory policies. PPPs are particularly noteworthy as they enable the sharing of risks, resources, and rewards between public and private entities (Tshombe & Molokwane, 2016). This collaboration can lead to more efficient and effective delivery of public goods and services, such as infrastructure development and environmental conservation. Similarly, CSR practices have evolved from voluntary initiatives to strategic partnerships where businesses align their operations with public policy objectives. Regulatory frameworks, on the other hand, provide the necessary guidelines and incentives for businesses to operate sustainably while contributing to broader societal goals. These interactions are crucial for creating a governance environment where business activities are not only profitable but also socially and environmentally responsible.

The United Nations' SDGs offer a comprehensive framework for guiding business-government collaborations toward sustainability (Ordonez-Ponce, 2023). The SDGs encompass 17 goals that address various aspects of sustainable development, from eradicating poverty to combating climate change (Confraria et al., 2024). Each goal is interconnected,

emphasizing the need for integrated approaches that involve all sectors of society (Ghosh & Chakravarthy, 2024). For businesses and governments, the SDGs provide a clear set of targets and indicators to measure progress and align their efforts. The literature suggests that successful governance integrations are those that explicitly align with the SDGs, ensuring that economic growth does not come at the expense of social equity or environmental integrity (Pradhan et al., 2017; Fallah Shayan et al., 2022; Ali et al., 2024; Norocel & Vierescu, 2024). By working together within the framework of the SDGs, businesses, and governments can create synergies that enhance resilience, promote equality, and improve the well-being of both people and the planet. These collaborations are anticipated to be instrumental in accomplishing the SDGs (Florini & Pauli, 2018).

Collaborative governance helps in promoting inclusivity, shared ownership of solutions, and leveraging the knowledge and resources of multiple actors to address complex, multidimensional challenges. For instance, collaborative governance can facilitate innovative solutions by integrating local and global perspectives, ensuring policies are both context-specific and adaptable. However, limitations also exist. Collaborative efforts often face challenges related to power imbalances, conflicting interests, and decision-making delays due to the need for consensus among stakeholders (Ali & Haapasalo, 2023; Belrhiti et al., 2024). Additionally, the process can be resource-intensive, requiring significant time, funding, and institutional capacity to achieve meaningful results. Acknowledging these strengths and limitations is essential to harness the full potential of collaborative governance for sustainable development while addressing its inherent challenges.

Research Methods

This research employs a qualitative case study approach, relying on expert interviews to explore the dynamics of collaborative governance for sustainable development in Nepal. The study focuses on two significant projects: a prominent power company and a large-scale water supply project, chosen for their relevance in demonstrating the intersection of government and business strategies aimed at enhancing resilience, equality, and well-being. These two entities are representative of Nepal's collaborative governance concerns due to their scale, sectoral diversity, and the contrasting nature of their governance structures. For confidentiality purposes, the identities of the organization and projects examined in this study have been anonymized.

Among the two, one is a prominent hydropower company in Nepal and one of the oldest and most successful public-private collaborations in the renewable energy sector. Initially established as a public-private partnership, the company has played a critical role in developing small hydropower projects in rural Nepal. The second is a large-scale water supply project in Nepal, an urban development initiative aimed at addressing the chronic water shortages in the Kathmandu Valley. The project involves diverting water from a river in the Sindhupalchowk district to Kathmandu Valley and represents a collaboration between the government of Nepal, international financial institutions, and private contractors.

Twelve structured interviews were conducted, involving key decision-makers and stakeholders directly involved in the governance and implementation of these projects. The interviews are designed to gather insights into how governance structures facilitate collaboration, enhance resilience, promote equality, and contribute to the overall well-being of local communities. To ensure clarity and accuracy, the interview questions were translated into Nepali, allowing the interviewees to express their views in the language they were most comfortable with.

Thematic analysis is used to analyze the data, identifying patterns and themes that align with the research objectives (Elliott, 2018). Thematic analysis is a widely used method among qualitative researchers for examining qualitative data, typically involving detailed and descriptive information (Naeem et al., 2023). These two projects were selected due to their prominent roles in sectors critical to Nepal's sustainable development and their diverse approaches to integrating business and government efforts. Ethical considerations, including informed consent, anonymity, and confidentiality, were strictly adhered to, ensuring the validity and reliability of the findings. The study acknowledges potential limitations, such as reliance on expert perspectives, but aims to provide in-depth insights into the collaborative governance practices in Nepal. For the hydropower company and water supply project, six interviews each were conducted:

Table 1
Overview of Interview Participants

Project	Interviewees	Number of Interviews
Hydropower Company	Senior executive involved in strategic planning	One
	Manager involved in operational management	One
	Official from the Ministry of Energy	One
	Representatives from communities affected by the project	Two
	Representative from a private investor supporting the company	One
Water Supply Project	Senior official from the Ministry of Water Supply	One
	Senior official from the project's board	One
	Project manager involved in the construction and operational phases	One
	Representatives from rural communities affected by the project	Two
	Environmental consultant or specialist who assessed the project's environmental impact	One

The interview questions used in this research were derived from established frameworks and previous studies on collaborative governance and sustainable development. Specifically, these questions are grounded in the literature that examines the integration of business and government strategies to enhance resilience, equality, and well-being in large-scale infrastructure projects. Key references include works by Ansell and Gash (2008) on collaborative governance, which emphasizes the importance of stakeholder engagement and adaptive governance, as well as studies by Bebbington et al. (2008) and Freeman (1984) on the role of stakeholder theory in ensuring equitable and sustainable outcomes in development projects.

These foundational studies provided the basis for formulating questions that explore the effectiveness of governance structures in addressing social, environmental, and economic challenges. With participants' consent, the interviews were audio-recorded to ensure the accuracy of the data. The recordings were then transcribed to facilitate a more detailed analysis. Table 2 summarizes the structured framework employed for data collection, thematic analysis, and reporting and highlights its integration with this study's key findings.

Table 2
Flowchart for the Thematic Analysis

Phase 1: Data Collection	Phase 2: Analysis of Interview Data	Phase 3: Reporting and Integrating Findings
Thematic Analysis	**Guiding Themes**	**Integrating Findings**
(1) Conducting structured interviews with key decision-makers and stakeholders.	(1) Resilience: Analyzing project adaptation to environmental, social, and operational challenges.	(1) Reviewing findings from the thematic analysis across both projects.
(2) Focusing on two significant projects	(2) Equality: Examining the distribution of benefits among stakeholders, especially marginalized groups.	(2) Looking for patterns and differences between textual data and interview insights.
(3) Interviewees include executives, ministry officials, and community representatives.	(3) Well-being: Exploring the overall social, economic, and environmental impacts on communities.	(3) Synthesizing and organizing findings into a comprehensive research report.
(4) Translating interview questions into Nepali for clarity and accuracy.	(4) Cross-referencing interview findings with literature on collaborative governance and sustainability.	(4) Choosing appropriate examples and quotes from interviews to support themes.

Result and Analysis

The research employed a theory-driven thematic analysis approach with predefined themes, as Boyatzis (1998) suggested, with further insights from Braun and Clarke (2006). This method focused on the predefined themes of resilience, equity, and well-being. The process began with applying these themes to the data, followed by systematic coding and categorization. The approach involved refining the initial themes, identifying new insights, and integrating additional themes as they emerged, culminating in a comprehensive analysis of the data through the lens of the predefined categories (see Figure 1).

Figure 1
Themes and Sub-themes from Thematic Analysis
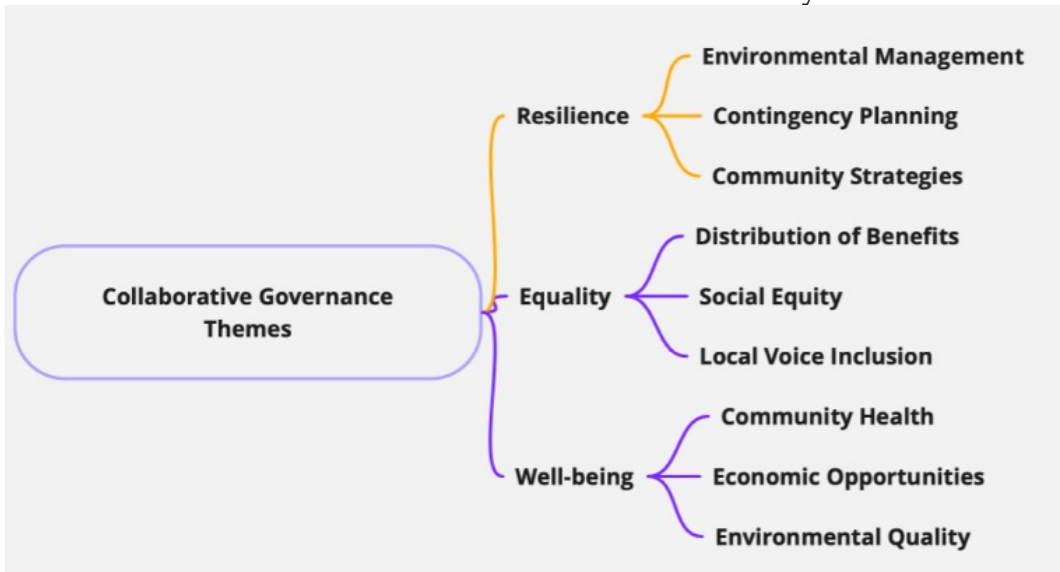
Theme 1: Resilience

Resilience was assessed by analyzing how the projects adapted to environmental, social, and operational challenges. This involved coding for references to contingency planning, environmental management, and the capacity of governance structures to withstand and recover from disruptions. For example, interviews with hydropower project officials highlighted a strong focus on regulatory compliance, but there were significant gaps in addressing the resilience of local communities and the environment. Similarly, in the water supply project, while technical resilience was a priority, the governance model failed to adequately incorporate community-based strategies to mitigate environmental risks such as flooding.

Theme 2: Equality

Equality was examined through the lens of how benefits were distributed among different stakeholders, particularly marginalized communities. Coding in this area involved identifying mentions of social equity, distribution of power, inclusion of local voices in decision-making, and the distribution of economic and social benefits. In both projects, it was found that the governance structures prioritized the needs of the government and private sector over those of the local communities, leading to unequal distributions of benefits. The employees from both companies felt that there was unequal distribution and exercise of power. Power was mostly centralized and non-distributed. Most of the decisions were dictated by top management. For instance, hydropower collaboration efforts were primarily directed toward securing project approvals, with limited engagement with employees and the affected populations. Despite its scale and international backing, the water supply project did not equitably address the needs of rural communities impacted by the project.

Theme 3: Well-being

Well-being was analyzed by exploring the overall impact of the projects on the social, economic, and environmental conditions of local communities. This involved coding for references to community health, economic opportunities, environmental quality, and social cohesion. The analysis revealed that both projects had mixed outcomes in terms of well-being. While there were some economic benefits, such as job creation and infrastructure development, the negative impacts such as environmental degradation and social disruption were significant. In the water supply project, for instance, the increase in flooding and other environmental hazards after the project led to dissatisfaction and a decline in community well-being.

Discussions

The analysis of both projects highlights critical gaps in the governance structures of these large-scale infrastructure projects, particularly concerning resilience, equality, and well-being. While both projects emphasized collaboration, particularly between government entities and private sector partners, this collaboration was predominantly focused on meeting regulatory requirements and securing project success. This approach, while effective in achieving technical objectives, failed to adequately address the broader social and environmental goals that are central to sustainable development.

In terms of resilience, the governance models in both projects were largely reactive, focusing on technical and regulatory challenges while neglecting the long-term environmental and social resilience of local communities. The hydropower company governance structure, for example, prioritized regulatory compliance over environmental management, resulting in increased vulnerability for the communities affected by the project. Environmental compliance of

hydropower projects was hardly known to people from the affected communities. Ensuring environmental compliance in hydropower projects enhances environmental quality and contributes to the production of sustainable energy from hydropower sources (Erlewein, 2013; Ghimire et al., 2021). Similarly, the focus of the water supply project on technical resilience did not translate into effective strategies for mitigating the environmental impacts on rural communities, leading to significant issues such as increased flooding.

Equality emerged as a major shortfall in both governance models. The distribution of benefits from these projects was heavily skewed in favor of the government and private sector, with local communities receiving limited attention. The lack of genuine engagement with these communities during the decision-making process further exacerbated this inequality. Another shortfall that emerged during the interview process was the power dynamics and its imbalance. Power asymmetry among participants is often seen as a challenge in collaborative governance (Ansell & Gash, 2008). The power imbalance can lead to the marginalization of weaker stakeholders, undermining the legitimacy and effectiveness of the collaboration (Delgado-Baena & Sianes, 2024). Employees expressed concerns about the influence of certain powerful stakeholders in collaborations, particularly the continued dominance of traditional public bureaucracies in governance, consistent with a previous study by Qi (2019). Involving and engaging employees and the community in shared decision-making allows community members and other stakeholders to actively participate in decisions that impact them, creating genuine partnerships (Degeling et al., 2017; Rong et al., 2023). The community members also were disappointed regarding the privatization of water supply systems. They had a fear that privatization would lead to higher water prices. In both projects, the affected populations felt marginalized and excluded from the benefits of the projects, highlighting the need for more inclusive governance practices that prioritize social equity.

The impact on well-being was similarly mixed, with the negative consequences of the projects often outweighing the positive. While there were some economic benefits, these were overshadowed by environmental degradation and social disruption. The failure to prioritize the well-being of local communities in both governance models led to dissatisfaction and a decline in quality of life for many of those affected. Although there are commitments to include all stakeholders in project management, local communities remain largely overlooked (Maddaloni & Sabini, 2022). For instance, the environmental damage caused by the water supply and its operations significantly undermined the well-being of rural communities despite the project's broader goals of improving water supply.

These findings suggest that while collaborative governance is essential for the success of large-scale infrastructure projects, it must be more inclusive and responsive to the needs of all stakeholders, particularly those most affected by the projects. The absence of robust mechanisms for community engagement, social equity, and environmental resilience indicates a need to reform how governance is approached in sustainable development projects in Nepal.

Conclusions and Implications

This study demonstrates the critical importance of integrating resilience, equality, and well-being into the governance structures of large infrastructure projects in Nepal. The thematic analysis of both projects reveals that while these projects achieved technical success through collaborative governance, they fell short in addressing the broader goals of sustainable development. The marginalization of local communities, inadequate attention to environmental resilience, and the unequal distribution of benefits underscore the limitations of the current governance models (Mendis et al., 2023; Jones et al., 2013). Even though project managers acknowledge the ethical responsibilities and advantages of involving local communities in decision-making, project organizations cannot often effectively implement this inclusive approach in practice (Maddaloni & Sabini, 2022).

To achieve truly sustainable development, future projects must adopt governance frameworks that genuinely incorporate the voices and needs of all stakeholders, particularly those most vulnerable to the impacts of such projects (Moallemi et al., 2020; Lima, 2021). By prioritizing resilience, equality, and well-being, these projects can not only meet their technical and economic objectives but also contribute to the long-term sustainability and prosperity of the communities they affect. The insights gained from this research provide valuable guidance for policymakers, project managers, and other stakeholders involved in infrastructure development in Nepal. By addressing the shortcomings identified in this study, future projects can better align with sustainable development goals, ensuring that the benefits are equitably distributed and that the environmental and social impacts are responsibly managed. The study highlights power imbalances within collaborative governance frameworks, where the voices of local communities are often marginalized. Addressing these imbalances requires mechanisms such as stakeholder mapping, power-neutral facilitation, and institutionalized frameworks for equitable participation, ensuring that all actors, particularly vulnerable groups, have a meaningful influence on decision-making (Mabrouk et al., 2014; Kovanen et al., 2023; Westin & Montgomerie, 2024).

The implications of this research are both theoretical and practical, providing valuable insights into the role of collaborative governance in sustainable development. Theoretically, the study enhances the understanding of governance frameworks by emphasizing the integration of resilience, equality, and well-being as core principles for achieving sustainable development. It contributes to the growing body of literature on collaborative governance by showcasing its potential to address complex socio-environmental challenges while also highlighting power asymmetries and stakeholder exclusion as critical barriers. Practically, the findings offer actionable recommendations for policymakers, project managers, and development practitioners to design more inclusive and equitable governance structures. By cultivating community engagement, ensuring equitable distribution of benefits, and prioritizing environmental and social resilience, the study underscores the need for adaptive governance models that align with SDGs. These insights are particularly relevant for developing countries like Nepal, where integrating diverse stakeholder perspectives can significantly improve the outcomes of large-scale infrastructure projects.

Limitations and Further Research

This research, while offering valuable insights into collaborative governance for sustainable development in Nepal, is not without limitations. The reliance on qualitative data from a limited number of interviews may constrain the generalizability of findings to other contexts or projects. Additionally, the focus on only two large-scale infrastructure projects narrows the scope of analysis, potentially overlooking other governance models or sectors. The study also primarily captures the perspectives of key stakeholders, which may not fully reflect the broader community or marginalized groups' experiences. Future research should address these gaps by incorporating a mixed-methods approach, including quantitative data and broader stakeholder participation, to provide a more comprehensive understanding of governance dynamics. Expanding the scope to include comparative studies across different regions and sectors could offer deeper insights into the diverse applications and challenges of collaborative governance. Furthermore, longitudinal studies could explore the long-term impacts of governance structures on resilience, equality, and well-being, thereby informing more effective strategies for sustainable development.

Conflict of Interest

The authors declare no conflict of interest and affirm that this work is original and adheres to ethical standards.

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