

UN and Muhammadiyah Cooperation in Eco-District Implementation to Address Environmental Issues in Yogyakarta

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ABSTRAK

Yogyakarta menghadapi masalah lingkungan serius terkait sampah dan aktivitas pertambangan yang merusak ekosistem. Sebagai organisasi sosio-religius yang peduli lingkungan, Muhammadiyah, melalui Majelis Lingkungan Hidupnya, memiliki visi meningkatkan kesadaran masyarakat untuk berperilaku ramah lingkungan, sejalan dengan tujuan SDGs poin 13 tentang aksi iklim. Di sisi lain, Perserikatan Bangsa-Bangsa (PBB) saat ini bekerja sama dengan Pemerintah Daerah Yogyakarta dalam proyek Eco-District, bertujuan membangun kawasan perkotaan berkelanjutan yang mengintegrasikan aspek lingkungan, ekonomi, dan sosial. Penelitian ini mengeksplorasi potensi kolaborasi antara PBB dan Muhammadiyah dalam implementasi konsep Eco-District untuk mengatasi isu lingkungan di Yogyakarta. Menggunakan metode kualitatif dengan tinjauan pustaka, penelitian ini membahas kekuatan kedua pihak—pengalaman global PBB dan pengaruh lokal Muhammadiyah—untuk mewujudkan strategi berkelanjutan seperti promosi energi terbarukan, manajemen limbah, dan ruang hijau. Studi ini juga menganalisis perencanaan, pelaksanaan, dan dampak berbagai proyek di bawah kerangka Eco-District, mengidentifikasi tantangan dan peluang yang dihadapi. Penelitian ini menegaskan pentingnya kemitraan multi-pemangku kepentingan dalam mengatasi isu lingkungan dan memajukan pembangunan perkotaan berkelanjutan.

Kata Kunci: Eco-District, Muhammadiyah, PBB, SDGs, Yogyakarta

ABSTRACT

Yogyakarta faces severe environmental issues, including a waste crisis and environmentally damaging mining activities. Muhammadiyah, a socio-religious organization, emphasizes environmental consciousness through its Environmental Assembly, aligning with SDG 13 on climate action. Meanwhile, the United Nations (UN), as a key SDG leader, is working with Yogyakarta's Regional Government on the Eco-District project, aiming to create sustainable urban areas by integrating environmental, economic, and social dimensions for an improved quality of life. This study explores the potential collaboration between the UN and Muhammadiyah to develop the Eco-District concept in Yogyakarta, leveraging the UN's global environmental experience and Muhammadiyah's extensive influence in Indonesian communities. Using a qualitative approach with a literature review, this research highlights strategies such as renewable energy promotion, waste management, green space expansion, and community education on sustainability. It assesses the planning, implementation, and outcomes of Eco-District projects, focusing on successes, challenges, and the value of multi-stakeholder partnerships for addressing complex environmental issues and fostering sustainable urban growth.

Keywords: Eco-District, Muhammadiyah, UN, SDGs, Yogyakarta

INTRODUCTION

Yogyakarta, a renowned cultural and educational hub in Indonesia, is grappling with escalating environmental challenges brought on by rapid urbanization, which has intensified

issues like waste management and environmental degradation. The city's waste crisis is reaching unprecedented levels, with waste accumulation posing severe risks to both the natural landscape and the public health of its residents (Mulasari et al., 2016; Sulistiya, 2023; Yusanto & Akbar, 2024). Concurrently, unchecked mining activities continue to damage the city's ecological stability (Pangaribowo & Putri, 2024), contributing to land erosion, pollution, and loss of biodiversity, which further exacerbate health risks and degrade environmental quality (Sonter et al., 2018).

As a city at the crossroads of tradition and modernization, Yogyakarta's environmental issues highlight the urgent need for sustainable urban management that balances economic growth with ecological protection. The environmental impact of unchecked urban expansion demands an integrated and cooperative approach that can address the complex interdependencies within urban systems. Studies confirm the necessity of multi-layered strategies, as Yogyakarta's waste levels have reached critical proportions, outpacing the current capacities of local waste management systems and creating a strain on available resources (Mukti & Efendi, 2020). Meanwhile, illegal and unregulated mining operations, frequently located close to residential areas, have compounded environmental degradation by contributing to soil erosion, water pollution, and habitat destruction, which collectively undermine the quality of life and safety of local communities (Alison Leigh Browne & Buckley, 2011).

Responding to these pressing environmental challenges, Muhammadiyah, one of Indonesia's most influential socio-religious organizations, has taken a proactive stance in advocating for environmental protection, grounded in the values of Islamic environmental ethics. Muhammadiyah's commitment to promoting environmental responsibility is exemplified in its mission to foster "awareness, concern, and environmentally friendly behavior" across society. This mission is in alignment with the Islamic principle of *Amar ma'ruf nahi munkar* - promoting good and preventing harm. Muhammadiyah's alignment with global environmental initiatives, particularly the United Nations Sustainable Development Goals (SDGs) with a focus on Goal 13 (Climate Action), underscores its dedication to a holistic approach to climate action that respects both religious values and global environmental standards (Pimpinan Pusat Muhammadiyah, 1997)

In tandem with Muhammadiyah's grassroots efforts, the United Nations (UN) has engaged with Yogyakarta's local government to spearhead the Eco-District project, an ambitious initiative aimed at fostering urban sustainability. This project, coordinated by the Berlin-based urban planning firm TSPA, seeks to create a model for sustainable urban communities that harmoniously integrate environmental, social, and economic aspects to enhance residents' quality of life. The Eco-District project envisions a future where urban areas in Yogyakarta are powered by renewable energy, supported by efficient waste management systems, and enhanced by green public spaces. The Eco-District approach promotes environmental responsibility, resilience, and sustainable growth, aiming to transform urban infrastructure in ways that are resilient to climate change and environmentally sustainable (TSPA, 2019)

Applying a collaborative governance framework offers a valuable analytical lens to understand the dynamic partnership between the UN, Muhammadiyah, and Yogyakarta's local stakeholders in addressing the city's environmental issues. Ansell and Gash (2007) describe

collaborative governance as a formal, consensus-driven process where public agencies and non-state actors work together towards shared goals. This model emphasizes inclusive participation, collective decision-making, and mutual accountability—all of which are crucial for tackling complex environmental issues that require cooperation across different sectors and respect for local cultural values (Ansell & Gash, 2007; Fatmawati et al., 2022). Through this framework, collaborative governance serves as both a strategy and a structural approach, offering a way to unite diverse stakeholders—from government bodies to community organizations, non-governmental organizations (NGOs), and the private sector—in a shared effort to address Yogyakarta's environmental crisis.

In practice, the collaborative governance model can effectively guide the Eco-District initiative by facilitating decision-making that includes both global expertise and local knowledge. The UN, with its global experience in implementing sustainable development projects, contributes valuable insights on environmental best practices and resource mobilization, while Muhammadiyah's extensive influence at the community level helps to foster local engagement and ensure that environmental initiatives are culturally relevant and well-received. This partnership has the potential to mobilize resources, align stakeholders, and inspire initiatives rooted in community-driven and culturally sensitive approaches, which are essential for achieving long-term sustainable urban development.

The Eco-District initiative's environmental objectives are addressed through strategic focuses on waste management, renewable energy, green space development, and environmental education (Bottero et al., 2019). For instance, the United Nations Environment Programme's eco-district guidebooks serve as a foundational resource, offering practical methods and principles that address the unique environmental challenges of urban spaces like Yogyakarta (Salat, 2021b). These guidebooks emphasize the importance of designing with nature, integrating urban systems, and fostering sustainable infrastructure, which are all crucial in tackling Yogyakarta's waste management and mining-related issues. By following these guidelines, the Eco-District project can promote sustainable urban living while respecting the cultural and social contexts of the region.

However, despite the potential of this partnership, several challenges persist. The lack of robust regulations limited institutional support, and varying degrees of community engagement present ongoing obstacles to sustainable progress. The framework of collaborative governance helps to address these issues by encouraging transparency, inclusivity and shared responsibility. The UN plays a pivotal role in advising the government on sustainable policies, while Muhammadiyah ensures these policies reach the community level through education and grassroots mobilization. Such an approach fosters accountability and creates pathways for local participation, which are essential factors in maintaining the momentum of sustainable practices.

Through the Eco-District initiative, collaborative governance is operationalized via structured interactions and participatory decision-making among stakeholders. The UN and Muhammadiyah have jointly organized educational seminars on sustainability, aimed at raising awareness and equipping residents with knowledge about green practices and urban resilience. Muhammadiyah's network enables these messages to permeate through various societal levels, encouraging behaviors that support environmental goals. Concurrently, local government agencies have collaborated with Muhammadiyah to align community

engagement efforts with broader urban planning policies, ensuring that environmental stewardship becomes an integrated part of daily urban life.

Facilitative leadership, combined with well-designed institutional frameworks, has proven instrumental in guiding these collaborative efforts. Local leaders have organized inclusive forums that bring together diverse stakeholders, fostering a sense of shared responsibility and accountability (Mohd Som et al., 2023). The UN's influence has encouraged the establishment of regulations and institutional frameworks that support collaboration, while Muhammadiyah has taken active steps to operationalize these frameworks at the grassroots level, creating a bottom-up approach to sustainable development that is both inclusive and practical.

This analysis of Yogyakarta's Eco-District initiative underscores the potential of collaborative governance to drive urban environmental solutions through multi-stakeholder engagement and shared accountability. Cities are critical sites for addressing global ecological crises, including climate change and resource depletion, due to their interconnectedness through markets, trade, and transportation networks—factors that increase environmental strain and pollution. Typical urban sustainability strategies, often grounded in neoliberal "green" development, carbon accounting, and tech-driven solutions, tend to reinforce corporate control and worsen urban inequalities. In contrast, Yogyakarta's collaborative approach provides an alternative model that emphasizes local knowledge, community-driven solutions, and holistic action, aligning with a more strategic and equitable vision for sustainable cities. This approach highlights five essential strategies for ecological urban futures: fostering non-extractive community economies, enabling cooperative and democratic processes, integrating social perspectives in resource management, promoting participatory governance, and embracing urban diversity and social justice. Through a partnership that combines international expertise with grassroots engagement, Yogyakarta's Eco-District demonstrates how adaptive, participatory governance can be effectively embedded in urban policy and planning, advancing the strategic capacity to create resilient cities that prioritize ecological health alongside social equity (Pickerill et al., 2024).

Ultimately, the UN-Muhammadiyah partnership exemplifies how international resources and local insights can be synergized to address critical environmental challenges. Grounded in collaborative governance, this Eco-District project is not only a response to Yogyakarta's pressing environmental issues but also a pioneering example of how partnerships can facilitate the integration of sustainability into urban planning. By empowering local communities, fostering inclusive decision-making, and building resilience, the initiative paves the way for a more sustainable urban future, with implications that extend beyond Yogyakarta to other urban centers in Southeast Asia. Through these efforts, the Eco-District could become a model for sustainable urbanization, encouraging similar projects and demonstrating the effectiveness of multi-stakeholder partnerships in achieving long-term environmental goals.

METHOD

This research adopts a qualitative methodology to examine the potential collaboration between the United Nations (UN) and Muhammadiyah in advancing the Eco-District initiative in Yogyakarta. The primary objective of this study is to investigate how these two influential entities might work together to address the region's pressing environmental challenges

through a sustainable urban development model. This exploration draws on an extensive literature review, providing insights into the roles, contributions, and limitations of each stakeholder in promoting sustainable development. The study seeks to identify and analyze critical areas of collaboration, offering a nuanced understanding of the opportunities and potential obstacles involved in realizing the Eco-District concept within Yogyakarta's unique social, cultural, and environmental context.

The research employs a descriptive approach to illustrate the current conditions and existing environmental challenges in Yogyakarta. Descriptive research enables a clear portrayal of the social landscape and organizational dynamics that shape environmental and urban governance (Neuman, 2007). By detailing the socio-political environment, this method helps contextualize the possible collaboration between the UN and Muhammadiyah, thus offering a comprehensive overview of the community relationships, governmental frameworks, and institutional capabilities that will influence the Eco-District's success. This descriptive lens provides a foundation for identifying gaps between current practices and desired sustainable outcomes, highlighting areas where coordinated efforts may be most impactful.

In addition to its descriptive focus, this research is grounded in academic inquiry, contributing to the broader field of sustainable urban governance and environmental policy. It employs abstract concepts such as collaborative governance, stakeholder engagement, and participatory decision-making to advance knowledge and inform future studies on sustainable urban development. Relying on secondary data sources—including academic articles, governmental reports, books, regulatory documents, and other relevant literature—the study draws from a diverse range of perspectives to ensure a well-rounded analysis of the collaborative process.

The data analysis process involves a systematic comparison of theoretical models with findings from literature reviews and related sources. This approach enables the research to construct a detailed conceptual framework based on both established theories and empirical observations. The analysis uses Ansell and Gash's collaborative governance model, which serves as the primary theoretical foundation. This model outlines four critical dimensions—starting conditions, facilitative leadership, institutional design, and collaborative process—that are essential for successful multi-stakeholder initiatives (Ansell & Gash, 2007). By applying this model, the study provides a structured understanding of how these dimensions can shape the potential collaboration between the UN and Muhammadiyah.

Within this framework, the study underscores the importance of stakeholder engagement, emphasizing that sustainable development initiatives benefit significantly from inclusive participation, shared decision-making, and mutual accountability. This aspect is particularly pertinent in the Eco-District context, as it calls for collaboration among a diverse array of actors—government bodies, local communities, non-governmental organizations, and private sector entities. Such collaborative efforts are expected to enhance the alignment of environmental objectives with local needs and cultural values, fostering a sense of collective responsibility toward sustainable urban growth. Additionally, the collaborative governance framework highlights the importance of leadership and institutional support in managing and facilitating the partnership. Facilitative leadership is necessary to coordinate the efforts of different stakeholders, helping to resolve conflicts, allocate resources, and establish a common vision for the Eco-District.

The findings from this study aim to provide practical recommendations for developing an effective, sustainable, and community-centered Eco-District in Yogyakarta. By synthesizing theoretical insights and empirical data, this research not only advances academic understanding of collaborative governance in sustainable development but also provides actionable strategies for real-world application. Through careful analysis of collaborative governance mechanisms, this study intends to reveal best practices and offer guidance on fostering successful multi-stakeholder partnerships, with broader implications for similar projects in other urban settings across Southeast Asia. Ultimately, this research emphasizes the transformative potential of cooperative efforts between global organizations and local actors, underscoring the role of multi-stakeholder partnerships in addressing complex environmental challenges and achieving long-term sustainability goals.

RESULT

The analysis of Yogyakarta's eco-district development strategy through the lenses of the UN Environment Programme (UNEP) guidelines and Ansell and Gash's collaborative governance model reveals a comprehensive understanding of how multi-stakeholder efforts can address complex urban sustainability challenges. This approach emphasizes four critical dimensions that serve as cornerstones for collaborative governance in sustainable urban planning: starting conditions, facilitative leadership, institutional design, and an inclusive collaborative process. These dimensions help align the priorities and resources of various stakeholders, fostering a shared vision that supports long-term, resilient development goals.

In the pursuit of sustainable urban development, the United Nations Environment Programme (UNEP) provides a comprehensive framework through its eight guidebooks on eco-districts. These guidebooks serve as a practical resource for city planners, policymakers, and community leaders seeking to create urban environments that balance environmental sustainability with social and economic vibrancy (Salat, 2021). Guidebook 3, titled "Design with Nature," advocates for aligning urban development with natural systems, emphasizing the conservation and sustainable use of ecological resources (Salat, 2021a). Guidebook 4, "Integrated Neighbourhood System," emphasizes the importance of designing urban neighborhoods interconnected through sustainable systems, such as efficient waste management, renewable energy, and accessible transportation networks (Salat, 2021b). Together, these guidebooks provide a structured approach to eco-district development, encouraging cities like Yogyakarta to adopt nature-based solutions and interconnected systems as part of a collaborative governance framework.

The eco-district strategy articulated in Guidebook 3, "Design with Nature," advocates for aligning urban development with natural systems, emphasizing the conservation and sustainable use of ecological resources (Salat, 2021a). Yogyakarta's environmental issues are deeply rooted in unsustainable practices, particularly illegal mining and inadequate waste management. Unregulated mining has led to significant land degradation, soil erosion, and water pollution, which not only harm the local environment but also endanger community health and agricultural productivity. The lack of stringent government oversight and insufficient community education has perpetuated these challenges, creating a cycle of ecological decline that is difficult to break.

The current institutional design in Yogyakarta has not adequately addressed these environmental concerns, partly due to limited coordination among agencies and the absence of robust leadership driving these initiatives (Ratnasari et al., 2015; Ritohardoyo & Sadali, 2017). However, a partnership between the UN, Muhammadiyah, and local government entities is gradually building momentum toward adopting nature-based solutions. The UN, leveraging its expertise and research capabilities, provides data and strategic consultations on sustainable mining and land use practices. This assistance helps frame actionable recommendations that are tailored to Yogyakarta's unique environmental context. Muhammadiyah plays an essential role in this collaboration by engaging directly with communities through education initiatives that raise awareness about environmental preservation and sustainable resource management.

This alliance has empowered communities and local stakeholders to become active participants in eco-friendly development processes. Muhammadiyah's community outreach efforts focus on creating a shared understanding of the ecological impact of activities such as mining, fostering a cultural shift toward environmental responsibility. The UN's technical support combined with Muhammadiyah's on-the-ground influence contributes to a facilitative leadership structure that helps overcome barriers in institutional design. The partnership is gradually creating a collaborative environment where stakeholders are better positioned to integrate nature-based solutions into urban planning practices, which aligns with Guidebook 3's vision of designing urban spaces that harmonize with natural ecosystems.

Guidebook 4, "Integrated Neighbourhood System," emphasizes the importance of designing urban neighborhoods that are interconnected through sustainable systems, such as efficient waste management, renewable energy, and accessible transportation networks. In Yogyakarta, existing waste management and transportation infrastructure fall short of these goals, posing significant obstacles to sustainable urban growth. The city's waste management system is primarily based on landfills, with recycling initiatives remaining underdeveloped due to a lack of resources, limited government support, and low levels of community engagement. This has resulted in overburdened landfill sites, soil contamination, and health risks for nearby residents (Asrifah et al., 2021; Fakhurozi et al., 2021; Mayasari et al., 2023).

Transportation infrastructure also presents challenges. The reliance on private vehicles due to limited public transportation options has led to severe traffic congestion, air pollution, and reduced quality of life. An integrated neighborhood system, as outlined in Guidebook 4, would require a fundamental restructuring of both waste management and transportation systems. However, the absence of an integrated institutional framework and limited leadership in driving these reforms have hindered Yogyakarta's ability to develop a more efficient, sustainable urban system.

Despite these challenges, the collaboration between the UN, Muhammadiyah, and local authorities has initiated steps toward creating a more sustainable urban environment. The UN, through its expertise in urban planning and sustainable systems, advocates for enhanced waste management practices and a shift toward more eco-friendly transportation networks. By providing technical guidance, the UN helps design frameworks that encourage recycling, waste segregation, and the reduction of landfill dependency. Additionally, the UN's recommendations for transportation reform focus on integrating public transit options,

reducing emissions, and enhancing connectivity within neighborhoods, which collectively promote a less car-dependent city.

Muhammadiyah complements these efforts by focusing on community education, which is crucial for long-term behavioral change. Through targeted campaigns, Muhammadiyah encourages residents to adopt sustainable waste disposal practices, participate in recycling programs, and understand the environmental benefits of public transportation. These educational initiatives, combined with advocacy efforts, play a critical role in increasing public support for eco-district principles.

The facilitative leadership provided by the UN and Muhammadiyah, combined with the institutional design modifications they champion, has gradually encouraged broader acceptance of sustainable systems. Although the transformation into an integrated neighborhood system is still in progress, these collaborative efforts have laid a strong foundation for sustainable urban development. By fostering cross-sectoral collaboration and enhancing public engagement, the partnership is working to overcome structural challenges and implement Guidebook 4's vision of interconnected, sustainable neighborhoods.

The combined insights from the eco-district framework and collaborative governance model underscore the importance of a holistic approach to urban sustainability in Yogyakarta. By aligning Guidebooks 3 and 4 with local governance frameworks and community engagement efforts, Yogyakarta's stakeholders are beginning to address the underlying factors that have hindered environmental progress. The collaborative governance model allows for adaptive management and continuous learning, which are critical for the dynamic and complex urban ecosystem of Yogyakarta. This approach enables stakeholders to respond proactively to emerging environmental challenges, ensuring that the eco-district strategy evolves in line with the city's needs and capacities.

In this context, the roles of the UN and Muhammadiyah are integral not only in facilitating immediate improvements but also in fostering a culture of environmental stewardship. This cultural shift is essential for the long-term success of Yogyakarta's eco-district strategy, as it encourages residents to become active participants in sustaining their environment. Over time, this collaborative governance structure, supported by both technical expertise and community-driven engagement, can serve as a model for other cities facing similar challenges in sustainable urban development.

Through sustained efforts, Yogyakarta's eco-district framework holds the potential to reshape the city into a resilient, eco-friendly urban center that prioritizes both environmental integrity and the well-being of its residents. The collaborative governance approach, enriched by UNEP guidelines and local partnerships, provides a pathway to achieving this vision. By building on the foundation of Guidebook 3's nature-based solutions and Guidebook 4's integrated systems, Yogyakarta can continue progressing toward an urban model that harmonizes with natural systems, empowers local communities, and promotes sustainable living at every level of society.

Towards a Resilient Urban Future for Yogyakarta and Beyond

The eco-district framework's alignment with UNEP guidelines and collaborative governance principles sets the stage for a sustainable, resilient Yogyakarta. By synthesizing nature-based design and integrated neighborhood systems, Yogyakarta's eco-district initiative

prioritizes both ecological balance and urban livability. The partnership between the UN and Muhammadiyah exemplifies a new era of urban planning that respects cultural values while adhering to international environmental standards, creating a development model that is both innovative and sustainable.

In embracing this approach, Yogyakarta positions itself not only as a sustainable city but also as a pioneer in urban resilience across Southeast Asia. The eco-district initiative offers a blueprint for cities aiming to harmonize urban growth with ecological preservation, demonstrating that sustainable development is achievable through committed, culturally resonant, and cooperative governance. The UN-Muhammadiyah partnership thus lays the groundwork for a future where urban sustainability is both a shared responsibility and a shared success, inspiring similar initiatives across the region and contributing to a more resilient, sustainable urban future globally.

DISCUSSION

Collaborative governance has become a transformative approach to addressing the urban sustainability challenges facing Yogyakarta. Through coordinated multi-stakeholder engagement, the framework integrates insights from both global expertise and local community involvement. This partnership has emerged as essential for tackling complex issues, such as illegal mining and ineffective waste management, that threaten Yogyakarta's environmental health. By exploring the core components of collaborative governance—starting conditions, facilitative leadership, institutional design, and the collaborative process—this analysis reveals the mechanisms that drive sustainable progress and demonstrates how collaboration can address multifaceted urban issues with long-lasting impact.

The starting conditions in Yogyakarta create both urgency and opportunity for a collaborative governance model. Persistent environmental issues, such as illegal mining activities and the lack of an effective waste management infrastructure, have severely impacted the local ecosystem. Illegal mining practices, have resulted in extensive land degradation, water contamination, and loss of biodiversity, compromising agricultural productivity and public health. Likewise, an inadequate waste management system, reliant on landfill dependency with minimal recycling initiatives, has overburdened existing infrastructure and contributed to pollution.

The entry of the UN into this setting has been instrumental in providing a robust framework for sustainable development. The UN's role has been to share critical expertise, offer technical assistance, and introduce international standards in environmental protection and sustainable practices, all of which have greatly contributed to policy alignment with global goals. Muhammadiyah, with its deep connections to the community and extensive network across Yogyakarta, complements the UN's efforts by fostering grassroots understanding and acceptance of environmental stewardship. By tailoring strategies to local cultural values and socioeconomic realities, Muhammadiyah enhances the community's involvement in these initiatives, creating an environment where residents can participate actively in sustainable practices.

This joint approach transforms the initial challenges into opportunities for cooperative action. Illegal mining, for instance, is not just addressed through enforcement, but also through educational campaigns and local dialogues that emphasize the long-term ecological and

economic benefits of sustainable land use. Similarly, waste management has evolved into a participatory effort where communities are encouraged to adopt waste sorting and recycling practices. The partnership, thus, has turned the urgency for environmental reform into a catalyst for collaborative action, mobilizing various stakeholders toward common sustainability goals.

Facilitative leadership has emerged as a critical component in guiding Yogyakarta toward sustainable urban development, though resource limitations and competing priorities within the local government have created challenges. The limited capacity of government agencies has often delayed public awareness campaigns and hindered the effective implementation of enhanced waste management and transportation systems. With its experience in bridging diverse viewpoints, the UN has stepped in to fulfill some of these gaps, providing facilitative leadership that encourages open dialogue among stakeholders, from policymakers to grassroots activists.

Through advocacy for sustainable urban planning policies, the UN has fostered cross-sectoral discussions that transcend administrative boundaries, while Muhammadiyah's local outreach ensures that these discussions resonate with the broader community. Muhammadiyah's engagement includes direct interaction with residents, neighborhood meetings, and educational workshops that foster a deeper understanding of environmental issues. This dual-tier leadership approach, with the UN promoting policy reforms and Muhammadiyah driving local engagement, has cultivated a supportive environment for sustainability initiatives that would be challenging to achieve through government action alone.

By bridging the international perspective of the UN with Muhammadiyah's community-driven approach, this facilitative leadership structure has cultivated a unique collaborative model. It encourages stakeholders to not only participate but also to invest in long-term environmental goals. Examples of this impact include neighborhood-level waste sorting initiatives and community training programs on sustainable practices in agriculture and water use. These efforts reflect a shift towards a culture of environmental responsibility, demonstrating how integrated, multi-level leadership can address and overcome barriers to urban sustainability.

Yogyakarta's fragmented institutional structure has historically hindered progress in sustainable urban development. Government agencies, though well-intentioned, often operate in silos, limiting collaboration across sectors. This isolation has restricted the effectiveness of environmental initiatives, as projects related to waste management, land use, and transportation rarely integrate, resulting in missed opportunities for a cohesive sustainability framework.

The collaborative governance model, however, has promoted a more unified institutional design. By integrating the UN's strategic guidance with Muhammadiyah's grassroots initiatives, the approach emphasizes a holistic framework where stakeholders work together under shared objectives. The UN's involvement has provided essential institutional support, such as data-sharing mechanisms, policy recommendations, and coordinated action plans that align with UNEP guidelines on sustainable urban ecosystems. Muhammadiyah's role, on the other hand, brings local insights and establishes trust within communities, ensuring that these initiatives are not only implemented but also embraced by the residents.

This integrated institutional design has allowed Yogyakarta to overcome previous limitations by creating a space where diverse stakeholders can collaborate on sustainable urban planning. The recent development of eco-friendly neighborhoods that emphasize waste sorting and recycling illustrates the strength of this collaborative institutional approach. By fostering an inclusive framework that involves both governmental bodies and community organizations, the collaborative governance model strengthens accountability and creates an enabling environment for meaningful change in Yogyakarta's urban infrastructure.

The collaborative process itself has been a powerful driver of sustainability efforts in Yogyakarta. The model prioritizes a participatory approach that engages community members, local leaders, and institutional actors in a continuous dialogue on sustainable development. In addressing illegal mining, for instance, the UN and Muhammadiyah have organized regular stakeholder meetings and workshops, where local residents can voice their concerns and contribute ideas. This participatory planning creates a sense of ownership and responsibility among community members, making sustainability initiatives more likely to succeed.

Waste management has seen particular success under this collaborative process. By establishing recycling programs and waste segregation systems, the partnership has enabled community groups to take charge of local waste issues. These programs have reduced landfill dependency, improved waste management efficiency, and raised awareness about the environmental impact of waste. Muhammadiyah's educational campaigns have been key in increasing community support, highlighting the benefits of sustainable waste practices. Through local campaigns, residents have been encouraged to adopt practices like composting, waste sorting, and plastic reduction, all of which contribute to a cleaner and more sustainable Yogyakarta.

In addition to waste management, transportation infrastructure is gradually evolving under the collaborative model. By advocating for a shift towards more eco-friendly public transit options, the UN has outlined frameworks to reduce traffic congestion, emissions, and reliance on private vehicles. Muhammadiyah's role in raising community awareness has helped drive acceptance of these sustainable transportation initiatives, further emphasizing how an inclusive collaborative process builds community support for large-scale urban changes.

The analysis highlights that collaborative governance plays an indispensable role in addressing Yogyakarta's urban and environmental challenges. By navigating the starting conditions, mobilizing multi-level leadership, enhancing institutional design, and fostering an inclusive process, the partnership between the UN, Muhammadiyah, and local communities illustrates a powerful model for achieving urban sustainability. This model of collaborative governance, grounded in shared values and adaptability, enables impactful and lasting change, building a strong foundation for Yogyakarta's sustainable future.

As Yogyakarta's eco-district strategy evolves, the collaborative governance model remains essential, providing both the structure and flexibility to respond to emerging challenges. This ongoing partnership exemplifies how sustainability is not just a policy goal but a community-driven process, where diverse stakeholders come together to protect and enhance their urban environment. Through the combined efforts of the UN's expertise and Muhammadiyah's community engagement, Yogyakarta is gradually transforming into a resilient, sustainable city. This journey reflects a broader vision for urban areas worldwide,

offering valuable lessons on the power of collaboration in building sustainable, eco-friendly urban centers that prioritize environmental integrity and public well-being.

CONCLUSION

The collaborative governance approach in Yogyakarta exemplifies how multi-stakeholder partnerships can address critical urban sustainability challenges. By focusing on waste management and the environmental impact of illegal mining, this case demonstrates the value of structured, inclusive frameworks, such as those proposed by Ansell and Gash, in guiding collective decision-making and mutual accountability among diverse actors.

Through this partnership, Muhammadiyah and the United Nations (UN) have leveraged their respective roles to address environmental issues at multiple levels: while the UN provides strategic guidance and policy advocacy, Muhammadiyah mobilizes community engagement and environmental stewardship. The Eco-District project, led by the Yogyakarta Regional Government with input from urban planning specialists like TSPA, has illustrated how an integrated, eco-district approach can promote sustainable urban development by combining ecological, economic, and social factors.

A Critical review of this framework highlights both its adaptability and its limitations. Ansell and Gash's model underscores the importance of facilitative leadership, inclusive participation, and well-designed institutional structures. However, the Yogyakarta case reveals that the model can be constrained by weak regulations and varying levels of community engagement, particularly in contexts where governance structures are less robust. A more flexible framework, one that incorporates mechanisms for strengthening regulatory enforcement and boosting local leadership capacities, may enhance collaborative outcomes in similar urban contexts.

Future studies could deepen this analysis by exploring additional case studies that address comparable urban environmental challenges, particularly in areas with diverse stakeholder groups and limited governance resources. Longitudinal studies could also examine the lasting impacts of collaborative governance on environmental resilience and community well-being. By refining these frameworks and examining their broader applications, researchers and policymakers can better understand the critical factors for sustainable urban governance and the roles different organizations play in fostering environmentally sustainable cities.

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