

Indigenous Policy Knowledge in Thematic Forest Governance of Yogyakarta

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Abstract: This study examines how indigenous knowledge is integrated into thematic forest governance in the Special Region of Yogyakarta and how this integration shapes community-based environmental management. The research employs a qualitative approach using document analysis, reviewing policy documents, regional regulations, institutional reports, and relevant scholarly literature on indigenous knowledge and forest governance. The findings show that thematic forest governance institutionalizes indigenous values rooted in the Javanese philosophy of *Memayu Hayuning Bawana*, which emphasizes ecological harmony between humans and nature. These values are operationalized through community practices such as *resan* or *rekso* (environmental guardianship) and through thematic forest categories including *Wana Boga*, *Wana Wisata*, *Wana Husada*, and *Wana Kriya*, which connect forest conservation with food systems, medicinal resources, tourism, and local livelihoods. The initiative is implemented through collaborative governance involving the Governor of Yogyakarta, the Environmental and Forestry Service (DLHK DIY), Forest Management Units, and Forest Farmer Groups. The study concludes that thematic forest governance represents a hybrid model integrating indigenous knowledge, environmental policy, and community-based management, contributing to more sustainable and culturally grounded forest governance.

Keyword: *Indigenous Knowledge, Thematic Forest, Governance, Yogyakarta, Community-Based Management, Environmental Policies*

Abstrak: Penelitian ini mengkaji bagaimana pengetahuan adat diintegrasikan ke dalam tata kelola hutan tematik di Daerah Istimewa Yogyakarta dan bagaimana integrasi ini membentuk pengelolaan lingkungan berbasis masyarakat. Penelitian ini menggunakan pendekatan kualitatif menggunakan analisis dokumen, meninjau dokumen kebijakan, peraturan daerah, laporan kelembagaan, dan literatur ilmiah yang relevan tentang pengetahuan adat dan tata kelola hutan. Temuan menunjukkan bahwa tata kelola hutan tematik melembagakan nilai-nilai adat yang berakar pada filosofi Jawa *Memayu Hayuning Bawana*, yang menekankan harmoni ekologis antara manusia dan alam. Nilai-nilai ini dioperasionalkan melalui praktik masyarakat seperti *resan* atau *rekso* (perwalian lingkungan) dan melalui kategori hutan tematik termasuk *Wana Boga*, *Wana Wisata*, *Wana Husada*, dan *Wana Kriya*, yang menghubungkan konservasi hutan dengan sistem pangan, sumber daya obat, pariwisata, dan mata pencaharian lokal. Inisiatif ini dilaksanakan melalui tata kelola kolaboratif yang melibatkan Gubernur Yogyakarta, Dinas Lingkungan Hidup dan Kehutanan (DLHK DIY), Kesatuan Pengelolaan Hutan, dan Kelompok Tani Hutan. Studi ini menyimpulkan bahwa tata kelola hutan tematik mewakili model hibrida yang mengintegrasikan pengetahuan adat, kebijakan lingkungan, dan pengelolaan berbasis masyarakat, berkontribusi pada tata kelola hutan yang lebih berkelanjutan dan berlandaskan budaya.

Kata kunci: *Pengetahuan Adat, Hutan Tematik, Tata Kelola, Yogyakarta, Pengelolaan Berbasis Masyarakat, Kebijakan Lingkungan*

INTRODUCTION

The growing recognition of indigenous knowledge in environmental governance reflects a shift from centralized, top-down management toward more participatory and adaptive approaches. Historically, forest governance in Indonesia has largely been dominated by state-centered policies that prioritize administrative control and economic utilization. Such approaches often marginalize local communities and overlook traditional ecological knowledge, resulting in recurring conflicts, environmental degradation, and ineffective conservation outcomes. If these governance limitations are not addressed, the exclusion of indigenous knowledge may continue to weaken community participation, reduce policy legitimacy, and undermine ecological sustainability. Recent scholarship therefore emphasizes the importance of integrating local knowledge systems into environmental governance as a means to improve resilience, equity, and long-term sustainability [1].

In Indonesia, recognition of indigenous knowledge has gradually been strengthened through legal and institutional frameworks. The Constitutional Court Ruling No. 35/PUU-X/2012 formally recognizes customary forests as distinct from state forests and affirms the rights of indigenous communities to manage their traditional territories. At the international level, instruments such as the United Nations Declaration on the Rights of Indigenous Peoples also acknowledge the role of indigenous knowledge in sustainable resource management and biodiversity conservation [2]. These developments indicate a broader policy shift that increasingly recognizes indigenous communities not merely as policy beneficiaries but as key actors in environmental governance.

Indigenous knowledge, often referred to as traditional ecological knowledge, represents a cumulative system of practices, beliefs, and environmental observations developed through long-term interaction between communities and their surrounding ecosystems [3]. In forest landscapes, local communities frequently act as custodians of ecological balance through practices such as sacred forest protection, rotational cultivation, and ecosystem-based resource management [4]. Empirical studies demonstrate that areas managed by indigenous communities often maintain biodiversity levels comparable to or even higher than those of formally protected areas [5]. Nevertheless, the integration of indigenous knowledge into formal governance remains uneven. Scientific-bureaucratic frameworks and development-oriented policies often privilege technocratic expertise while marginalizing local perspectives, creating tensions between conservation objectives and community livelihoods.

Previous studies have explored various approaches to addressing this issue. Research on community-based forestry and adaptive governance highlights the potential of participatory management to enhance ecological outcomes and strengthen local institutions [4]. Other studies emphasize the role of indigenous knowledge in improving forest landscape management and climate resilience [3]. While these

studies demonstrate the value of indigenous knowledge, most focus primarily on ecological outcomes or community practices. Limited attention has been given to how indigenous knowledge is institutionalized within formal policy frameworks and governance arrangements, particularly at the regional level. Consequently, the mechanisms through which local knowledge interacts with state institutions and policy instruments remain insufficiently understood. This gap is particularly relevant in the context of emerging governance innovations that attempt to integrate cultural values into environmental policy.

The Special Region of Yogyakarta provides an important case for examining these dynamics. The province possesses a distinctive governance system shaped by its special autonomy status (*keistimewaan*), which incorporates cultural authority and traditional institutions into regional governance. Forest areas in Yogyakarta cover approximately 18,715.06 hectares and support the livelihoods of many communities living around forest landscapes. Forest management is administered by the Forest Management Unit (KPH) under the provincial Environmental and Forestry Service, with significant emphasis on community participation [6]. In 2021, the provincial government introduced the thematic forest (*hutan tematik*) initiative as an innovative approach to forest governance that combines ecological conservation with community-based economic development.

The thematic forest program integrates indigenous values and policy instruments through several thematic categories such as *Wana Wisata*, *Wana Husada*, *Wana Boga*, and *Wana Kriya*, each designed to align ecological functions with community needs. For example, *Wanaboga Nangka* connects forest conservation with local food systems through the cultivation of jackfruit, a key ingredient in Yogyakarta's traditional cuisine, *gudeg*. By linking conservation objectives with local economic activities, the initiative seeks to enhance both environmental sustainability and community welfare [7].

From a theoretical perspective, the thematic forest initiative reflects several key governance frameworks. Multilevel governance highlights the interaction between provincial institutions, national ministries, and local communities in shaping policy implementation. Adaptive governance emphasizes the flexibility of management strategies that respond to ecological and socio-cultural contexts [3]. Meanwhile, community-based forestry underscores the role of local actors, particularly Forest Farmer Groups (KTH), in planning and implementing forest management practices [8]. Together, these theoretical perspectives provide an analytical framework for understanding how indigenous knowledge can be incorporated into contemporary environmental governance systems.

Despite these promising developments, challenges remain. The symbolic recognition of indigenous knowledge without meaningful decision-making authority may lead to the tokenization of cultural values. In addition, market-oriented initiatives that promote sociopreneurship may risk commodifying traditional practices. If these challenges are not carefully addressed, the integration of indigenous knowledge into policy may remain superficial and fail to produce equitable governance outcomes. Against this background, this study addresses the following research question: How is indigenous knowledge integrated into thematic forest governance in the Special Region of Yogyakarta,

and how does this integration shape environmental governance and community participation? The objective of this research is to analyze the institutionalization of indigenous knowledge within the thematic forest governance framework and to examine how local values, policies, and actors interact in shaping forest management practices.

The novelty of this study lies in its focus on the institutionalization of indigenous policy knowledge within a regional governance innovation. Unlike previous studies that primarily examine ecological practices or community participation, this research analyzes how indigenous knowledge is translated into policy frameworks, governance arrangements, and thematic forest management strategies. By examining Yogyakarta's thematic forest initiative, the study contributes to broader debates on environmental governance by demonstrating how indigenous knowledge can be embedded within formal policy structures to support more inclusive, adaptive, and culturally grounded natural resource management.

RESEARCH METHOD

This study employed a qualitative research design with a focus on document research as the primary method of data collection and analysis. Document research is particularly useful for examining policy frameworks, institutional practices, and discursive narratives embedded in written materials [9]. It allows the researcher to critically analyze how indigenous knowledge is framed, recognized, and operationalized in the governance of natural resources. By relying on documentary sources, the study aimed to capture both the formal policy discourse and the broader socio-ecological context of thematic forest governance in Yogyakarta.

The documents analyzed in this study include official policy texts, regional regulations, ministerial decrees, and legal frameworks related to forest governance and indigenous rights in Indonesia. Key national documents examined include Constitutional Court Decision No. 35/PUU-X/2012, which recognizes customary forests (*hutan adat*) as distinct from state forests and affirms indigenous peoples' rights, Law No. 13 of 2012 on the Special Status of the Special Region of Yogyakarta, which provides the legal basis for culturally grounded governance including forest management on Sultanate lands (*tanah dede keprabon*), and Government Regulation No. 23 of 2021 on Forestry Administration, which regulates forest management, utilization, and community participation and allows thematic and community-based forest governance. The analysis also reviewed policy frameworks issued by the Ministry of Environment and Forestry (KLHK) related to social forestry, as well as institutional reports published by the Department of Environment and Forestry of Yogyakarta (DLHK DIY) concerning the development of thematic forests introduced in 2021, particularly documents describing the design and implementation of programs such as *Wana Wiyata* and *Wanaboga Nangka*.

Complementing these legal and policy documents, the study also analyzed secondary sources such as academic articles, research reports, and international frameworks related to indigenous policy

knowledge and natural resource governance. Publications from organizations such as CIFOR-ICRAF and the Sebijak Institute were examined to understand the broader policy transformations in Indonesian forestry. Scholarly literature was reviewed to situate Yogyakarta's case within global debates on adaptive governance, multilevel governance, and community-based forestry [3], [8]. This combination of primary and secondary documents provided a comprehensive understanding of both the normative foundations and the practical dynamics of thematic forest governance.

The analysis followed a thematic approach, where documents were systematically read, coded, and categorized according to key themes: recognition of indigenous knowledge, forest governance models, socio-ecological innovation, and community participation. The interpretation of these themes was guided by several theoretical perspectives, including multilevel governance, which explains the interaction between national, regional, and community actors in environmental policy; adaptive governance, which emphasizes flexible and context-sensitive management of socio-ecological systems; and community-based forestry, which highlights the role of local communities as active actors in forest management. The coding process therefore focused on identifying how indigenous knowledge is institutionalized within these governance frameworks and how it shapes policy implementation in Yogyakarta. Attention was given not only to explicit statements within documents but also to underlying assumptions, institutional logic, and the discursive framing of communities as actors in governance [10].

To ensure reliability and validity, triangulation was applied by comparing multiple types of documents legal, policy, institutional, and academic against each other. This strategy minimized the risk of bias arising from reliance on a single type of source and provided a more nuanced interpretation of governance practices [11]. The document analysis was also contextualized within Indonesia's broader environmental policy framework and international commitments, allowing for the identification of convergences and tensions between local, national, and global governance narratives.

By conducting document research, this study was able to examine how indigenous knowledge is formally recognized in policy, how it is integrated into thematic forest programs, and how these practices contribute to reshaping natural resource governance in Yogyakarta. This method provided the analytical foundation for understanding the role of indigenous knowledge in policy innovation and the transformation of forest governance toward more participatory, adaptive, and culturally grounded models.

RESULT AND DICUSSION

1. Context of Yogyakarta Thematic Forest

Forest management in the Special Region of Yogyakarta (DIY) exhibits distinctive and unique characteristics compared to other provinces in Indonesia. These differences are shaped by historical factors, the region's special autonomy status, and its diverse biophysical and social conditions. Forests in Yogyakarta are not merely regarded as natural resources but also as socio-cultural and economic

spaces that are deeply intertwined with the Yogyakarta Sultanate. Consequently, the concept of thematic forests (*hutan tematik*) has emerged as a strategic approach to forest management that simultaneously preserves the region's cultural identity and ecological sustainability.

According to the Environmental and Forestry Service of Yogyakarta, name is DLHK DIY, the forest typology in the region is relatively complete, encompassing production, protection, and conservation forests. Management of forest areas is determined by their status production and protection forests are managed by the Forest Management Unit (Kesatuan Pengelolaan Hutan or KPH), conservation forests are jointly managed with the central government as Taman Nasional, Suaka Margasatwa, Cagar Alam, Taman Wisata Alam, while Taman Hutan Raya Buner are managed by local institutions. Although the total forest area in Yogyakarta is relatively small, surrounding communities maintain a strong emotional and economic attachment to these forests. Demographically, the forest fringe areas are characterized by high population density, dynamic social mobility, and a strong agrarian culture. For local communities, forests serve not only as sources of timber but also as economic spaces through intercropping and social forestry schemes. Additionally, forests hold profound spiritual and cultural significance, such as in the protected forest of Imogiri.

However, forest management faces several challenges, including land availability, climate change mitigation, food security, and biodiversity conservation. These challenges necessitate an integrated approach that harmonizes social, economic, and ecological dimensions. Forest management in Yogyakarta continues to refer to the historical context and Law No. 13 of 2012 concerning the Special Status of the Special Region of Yogyakarta. The law stipulates that forest lands are part of the tanah dede keprabon, lands historically owned by the Sultanate and traditionally utilized for forestry purposes. In this context, Wana Keprabon represents a forest management branding concept emphasizing the equitable distribution of benefits for cultural development and social welfare while maintaining ecological, economic, and social functions.

The uniqueness of forest management in Yogyakarta lies in its governance over privately owned Sultanate lands that are used for public benefit. Institutionally, forest management is conducted by the Yogyakarta Environmental and Forestry Service, operating within the framework of regional special autonomy. This distinct arrangement positions forest management not only as a natural and economic resource activity but also as an integration of social, cultural, and ecological values. The concept of Wana Keprabon also symbolizes that forests in Yogyakarta are cultural and ecological spaces inseparable from the region's special identity.

In line with these principles, the Yogyakarta Regional Government, through the Environmental and Forestry Service, initiated the thematic forest (*hutan tematik*) scheme in 2021. Thematic forests are an adaptive forest management approach that aligns with native vegetation and indigenous cultural practices. According to the 2022 study report by DLHK DIY, approximately 90% of forest areas in the region are categorized as production forests, with *Melaleuca cajuputi* being the dominant species

processed in local distillation industries. Land cover analysis reveals that forest areas, regardless of function, are not entirely dominated by tree vegetation, with portions classified as agricultural land, either mixed or monocultural. This indicates significant pressure on forest areas to meet local food needs, particularly within production and protection forests.

Spatial variation analysis shows the presence of more than eight potential species suitable for agroforestry or solitary cultivation. Market opportunities further indicate the potential for developing multi-enterprise forestry models and promoting ecosystem service-based activities such as ecotourism. Considering these conditions, five categories of thematic forests have been developed: wana wisata, wana husada, wana kriya, wana boga and wana patra.

TABLE 1. Key Findings on the Context of Thematic Forest Governance in Yogyakarta

Finding Category	Description	Implication for Governance
Institutional Context	Forest governance operates under regional autonomy and the authority of the Yogyakarta Sultanate, particularly through Law No. 13 of 2012 and the concept of <i>tanah dede keprabon</i> .	Enables integration of cultural values and formal governance structures.
Forest Typology	Forest areas consist of production, protection, and conservation forests managed through KPH and collaboration with national institutions.	Requires coordination across multiple governance levels.
Socio-economic Dependency	Communities around forest areas depend on forests for livelihoods through agroforestry, intercropping, and forest-based enterprises.	Strengthens the need for participatory and community-based management.
Ecological and Land-use Pressure	Forest areas face pressure from food demand, land-use changes, and climate change challenges.	Necessitates integrated socio-ecological management strategies.
Policy Innovation	Introduction of thematic forest governance in 2021 by DLHK DIY as a socio-ecological policy innovation.	Provides a framework linking conservation with local economic activities.
Thematic Forest Categories	Development of thematic forests including Wana Wisata, Wana Husada, Wana Kriya, Wana Boga, and Wana Patra .	Aligns forest management with tourism, medicinal plants, timber production, food security, and essential oil production.

Source: Researcher Processed (2025)

Wana Wisata focuses on utilizing forest areas for ecosystem services and ecotourism, as exemplified by the Kalibiru Tourism Forest, which capitalizes on the natural and scenic uniqueness of the area. Forest zones may also serve as supporting environments for existing tourism sites. Wana Kriya emphasizes forest utilization for timber commodities through effective planting schemes and the optimization of indigenous species for wood-based industries such as furniture and carpentry. The planting structure typically consists of main, intercropped, border, and edge plants.

Wana Husada develops forests as sources of medicinal raw materials to reduce dependence on imported pharmaceutical supplies. Commonly cultivated species include tubers, shrubs, and herbs,

reflecting Yogyakarta's local wisdom in traditional medicine and herbal culture. Wana Boga designates forests for food crop cultivation to address food security issues. For example, Wana Boga in Karangmojo, inaugurated in January 2022, primarily cultivates jackfruit (*Artocarpus heterophyllus*), which contributes to local food supply chains, including raw materials for Yogyakarta's traditional dish, gudeg. Finally, Wana Patra focuses on *Melaleuca cajuputi* stands, granting local communities access to intercropping and involvement in leaf harvesting and essential oil production.



FIGURE 1. Yogyakarta Thematic Forest Photos
Source: Researcher Processed (2025)

The development of thematic forests is not limited to single use models but is intended as a multi enterprise forestry approach that incorporates local wisdom. Accordingly, Wana Husada may be integrated with Wana Boga or other planting schemes to maximize land efficiency and resilience. Thematic forest planning thus emphasizes planting design and adaptive combinations while maintaining dominance of native species. Wana Wisata and Wana Husada are best suited for protection forests with hydrological functions, whereas Wana Boga, Wana Kriya, and Wana Patra are more appropriate for production forest zones.

2. Indigenous Value on Human-Nature Relation in Yogyakarta

The indigenous relationship between humans and nature in the Special Region of Yogyakarta (DIY) is fundamentally guided by the Javanese cosmological philosophy of *Memayu Hayuning Bawana*, which translates to the act of "striving for the well-being of the world" [12], [13]. This deep-seated value system asserts a profound and ethical responsibility for individuals to maintain cosmic, social, and ecological harmony, positioning humans not as dominant resource users but as moral agents (*kawula*) responsible for ensuring equilibrium (*keseimbangan*) within their surroundings. This deeply ingrained principal mandates that development and resource utilization, including strategies for thematic forest governance must prioritize the long-term health and preservation of life-support systems. This philosophical framework distinguishes indigenous policy knowledge in Yogyakarta by replacing purely utilitarian approaches with a holistic, reciprocal relationship where the environment is protected and maintained because human well-being is intrinsically tied to *hayuning bawana* (well-being of the universe).

The practical translation of this high philosophy into tangible local practices and policy narratives is most evident in the concept of *resan* or *rekso*, which literally means "guardian" or "protector" of the environment [14]. In the fragile karst topography of Gunungkidul Regency, where the challenges of drought and water scarcity are chronic, this value manifests through focused collective action dedicated to conserving surface and subterranean water sources. This effort is achieved primarily by protecting *pohon pengikat* (tying trees) or water-retaining forest stands. The local community's recognition of certain deep-rooted trees (e.g., banyan, gayam) as essential, near-sacred guardians of water sources is a direct, practical application of *Memayu Hayuning Bawana's* call for ecological stewardship. This indigenous knowledge transforms forest areas and critical ecosystem services like water provision into a communal asset requiring mutual and ethical protection, often channeled through non-formal social movements such as the *Resan Gunungkidul* community. This demonstrates a direct link between an abstract philosophical value and tangible, policy-relevant conservation behavior.

Furthermore, this indigenous value system is visibly embedded in the practical systems of land classification and resource management within Yogyakarta's forestry landscape. The indigenous land-use category of *wono* in Gunungkidul exemplifies a form of private smallholder forest management where land cover enhancement is driven by a profound understanding of ecological necessity [15]. *Wono*, clearly demarcated from traditional agricultural land (*tegalan*), is managed by the community specifically for diverse forestry plants (e.g., teak, mahogany, sengon) that function to dramatically improve carbon storage and stabilize degraded land cover. This local management system tacitly acknowledges the forest's crucial ecological role such as preventing floods, regulating the hydrological system, and maintaining soil fertility even over the pursuit of immediate or short-term economic gains.

These indigenous values collectively form the normative and practical foundation of thematic forest governance in Yogyakarta. As illustrated in Figure 2, thematic forest management is developed based on indigenous knowledge, stand dominance, and socio-economic considerations of forest utilization. Within this framework, the principle of *Memayu Hayuning Bawana* provides the ethical orientation for maintaining ecological harmony, while practices such as *resan* or *rekso* represent community-based environmental guardianship that protects critical ecosystem services, particularly water sources. Meanwhile, the land-use system of *wono* demonstrates how local communities operationalize these values through diverse tree cultivation and agroforestry practices. Together, these values inform the sociopreneurial forest development approach shown in the figure, which aims to generate environmental sustainability, economic livelihoods, and social welfare.

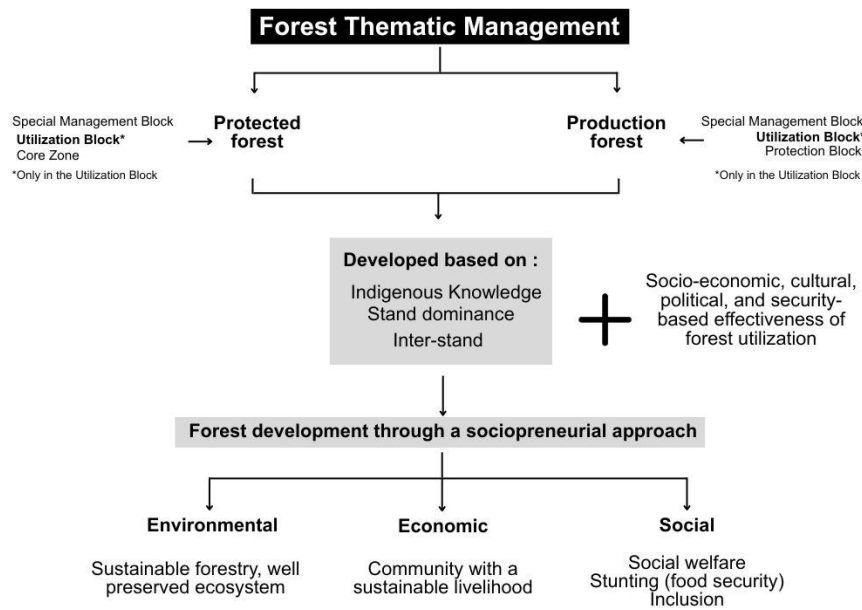


FIGURE 2. Management of Yogyakarta Thematic Forest
 Source: Researcher Processed (2025)

While evolving socioeconomic contexts, such as the rise of ecotourism in areas like RPH Mangunan, have introduced new economic drivers, the fundamental indigenous value remains the foundation. The prioritization of aesthetic and environmental services, as seen in nature tourism development that seeks to utilize the forest's scenery and clean air without physically destroying the stands, is a direct operationalization of the Memayu Hayuning Bawana principle of seeking harmony and well-being [16]. Groups like the Forest Farmer Groups (KTH) inherently operate under the local wisdom that views maintaining forest health as an essential precursor to sustainable economic benefit, effectively merging traditional ethics with modern economic viability [16].

The integration of these indigenous values thus provides a robust and locally resonant framework for thematic forest governance in Yogyakarta, moving far beyond purely technocratic or compliance-based regulation [12]. This indigenous policy knowledge transforms forest policy formulation into a matter of ethical engagement [17]. Firstly, it institutionalizes a proactive and preventative conservation ethic, where the protection of vital local ecosystem services (like water and soil health) is valued not just economically but holistically, encompassing spiritual and cultural dimensions [14]. Secondly, it strongly reinforces community empowerment, as the legitimacy and efficacy of conservation and management initiatives are tied directly to the revival and application of these deeply rooted local knowledge systems (rekso/resan) [17]. For policymakers in thematic forest governance, acknowledging and formally integrating the Memayu Hayuning Bawana principle and its practical manifestations in community behavior and the wono management model is paramount to fostering effective, sustainable, and socially just forest management. It ensures that thematic policies, whether focused on ecotourism, carbon sequestration, or climate change mitigation, are firmly anchored in a mandate for reciprocal harmony

between the human community and the natural world, which is the core indigenous value proposition of Yogyakarta.

3. Analysis on Key Actor and Institution

The success of the Thematic Forest Development Program in the Special Region of Yogyakarta requires the active participation of stakeholders according to their respective capacities and authorities. Nearly all organizations involved must build relationships and communicate effectively with local and central governments, community organizations, interest groups, and other relevant stakeholders. The implementation of thematic forest programs necessitates the engagement of key actors who play crucial roles in supporting program sustainability. Within the framework of governance, forest management is no longer viewed as the exclusive domain of the state but as the outcome of dynamic interactions among governmental bodies, civil society, non governmental organizations (NGOs), and the private sector. This approach aligns with stakeholder theory, which emphasizes that every public policy must take into account the interests and influence of both internal and external actors [18]. Therefore, actor and institutional analysis becomes essential to identify who is involved, the extent of their interests, and how their influence shapes the implementation of thematic forest programs in Yogyakarta.

To clarify the roles of actors involved in thematic forest governance, the findings of this study identify several key stakeholders and their respective responsibilities based on regulatory mandates and field practices. These actors and their roles are summarized in Table 2.

TABLE 2. Key Actors and Institutional Roles in Thematic Forest Governance in Yogyakarta

Actor	Institutional Basis / Regulation	Roles and Responsibilities in Practice
Governor of Yogyakarta	Law No. 13 of 2012 on the Special Status of Yogyakarta	Provides political leadership, policy direction, and cross-sectoral coordination; supports thematic forest programs through regional regulations and budget allocation.
DLHK DIY (Environmental and Forestry Service)	Regional forestry administration under provincial authority	Formulates policies, supervises program implementation, coordinates with KPH and other agencies, and facilitates thematic forest development programs.
Forest Management Unit (KPH)	Forestry governance framework under KLHK and provincial forestry institutions	Implements forest management activities, monitors forest areas, mediates conflicts, and facilitates community participation in thematic forest programs.
Forestry extension officers (Penyuluh), Sinder, Mandor	Technical forestry operational structure	Provide technical assistance, supervise field activities, and support implementation of forestry practices and community programs.
Forest Farmer Groups (Kelompok Tani Hutan / KTH)	Social forestry policies and community-based forestry programs	Manage forest areas at the local level, implement agroforestry and intercropping practices, and develop forest-based livelihoods.
Village governments (Lurah and village officials)	Village governance framework	Mobilize community participation, facilitate coordination between government programs and local residents, and support local legitimacy of forest initiatives.

NGOs	Civil society participation in environmental governance	Facilitate community empowerment, advocacy, and collaboration between communities, government institutions, and donors.
Media	Public communication and oversight	Disseminate information, shape public perception, and increase transparency and public support for forest governance programs.
Local communities	Community participation in forest management	Utilize forest resources, participate in conservation activities, and support sustainable forest management practices.

Source: Researcher Processed (2025)

In the context of DIY, several key actors possess significant interests and strong influence over forest policy and program implementation. The Governor of Yogyakarta, as the holder of special authority under the region’s autonomous status, holds political legitimacy that largely determines the direction of forestry policies. The Governor’s support through regulations, budget allocations, and cross-sectoral coordination serves as the foundation for program sustainability. At the operational level, the Yogyakarta Environmental and Forestry Service (Dinas Lingkungan Hidup dan Kehutanan, DLHK DIY) plays a central role as a technical institution responsible for policy formulation, field supervision, and inter agency coordination. This strategic role is further reinforced by the Yogyakarta Forest Management Unit (Kesatuan Pengelolaan Hutan or KPH), which functions as the frontline implementing body in managing forest areas.

The KPH not only executes technical forestry activities but also acts as a mediator in conflict management, bridging communication between local governments and communities, and ensuring that field operations remain aligned with provincial policies. These activities are supported by forestry extension officers, foremen (sinder), and supervisors (mandor). On the community side, Kelompok Tani Hutan (Forest Farmer Groups or KTH) serve as grassroots organizations that directly interact with forest areas. Their participation is crucial not only as beneficiaries of forest resources but also as custodians of forest sustainability through practices such as social forestry, intercropping (tumpang Sari), and the development of non-timber forest products.

Beyond these core actors, there are groups whose interests may be relatively smaller but whose influence remains substantial in determining program success. Village heads (lurah) and village officials play strategic roles in mobilizing residents and establishing social legitimacy at the local level. Their support or resistance can significantly influence the degree of community participation in the thematic forest program. Mass media both local and national also play an important role in shaping public opinion. Positive media coverage can enhance public trust and community support, whereas negative narratives may undermine the legitimacy of the program. Similarly, NGOs operating in environmental and community empowerment sectors often function as bridging actors, facilitating communication between communities, governments, and donors, while strengthening community capacity through advocacy and assistance programs directed toward KTHs.



FIGURE 3. Key Actor on Yogyakarta Thematic Forest Governance
Source: Researcher Processed (2025)

In contrast, forest-dependent communities often have strong interests but relatively weak influence. Their livelihoods rely heavily on forest resources timber, non-timber forest products, and ecosystem services yet their voices are frequently underrepresented in decision-making processes due to limited access and authority. Therefore, it is essential for local governments and technical institutions to expand participatory spaces for these communities in both planning and implementation stages. Community participation should not merely serve as a formality but must be integrated into a co-management framework that positions local communities as equal partners in governance. Meanwhile, the wider public outside forest areas can be categorized as having both low interest and low influence. Nonetheless, their existence should not be neglected, as they remain beneficiaries of the forests' ecological functions and play a role in fostering broader ecological awareness.

The relationships among these actors reflect a complex dynamic in which ecological, economic, social, and cultural interests interact within the framework of Yogyakarta's special autonomy. The Governor and DLHK DIY function as policy leaders, KPH as the implementer at the operational level, and KTH, village authorities, and local communities as grassroots executors. Simultaneously, NGOs and the media play oversight and facilitative roles in promoting transparency and public communication. These multi-actor interactions form a collaborative governance model or co-management that emphasizes shared responsibilities and collective decision-making between state and society. However, in practice, the diverse interests of these actors may give rise to potential conflicts between communities and the government or even among community groups themselves. Therefore, effective communication and mediation mechanisms are essential to maintain program stability and ensure equitable outcomes.

An analysis based on the interest influence framework reveals that engagement strategies must be tailored to each actor's position. Key actors with high interest and high influence such as the Governor, DLHK, KPH, and KTH should be involved intensively throughout all stages of program development, from planning and implementation to evaluation. Actors with high influence but low interest, such as

village officials, media, and NGOs, require adaptive communication strategies and collaborative partnerships. Communities with high interest but low influence should be empowered through education, capacity building, and access to decision making processes to enhance their bargaining power in forest management. Meanwhile, the broader public with both low interest and low influence should be periodically informed to sustain public awareness and support.

Through these strategies, the thematic forest program in Yogyakarta can achieve a governance model that is collaborative, inclusive, and sustainable. Such governance not only contributes to improving the welfare of forest-dependent communities but also strengthens environmental conservation and reinforces Yogyakarta's unique cultural identity as a region with distinctive traditions and forest management practices.

CONCLUSION

This study examined how indigenous knowledge is integrated into thematic forest governance in the Special Region of Yogyakarta and how this integration shapes environmental governance practices. The findings show that indigenous values rooted in the Javanese philosophy of *Memayu Hayuning Bawana* play a central role in guiding forest governance by emphasizing ecological harmony and ethical responsibility toward nature. These values are operationalized through local practices such as *resan* or *rekso*, which promote community-based environmental stewardship, and through traditional land-use systems such as *wono*, which support sustainable forest management. In the thematic forest program, these indigenous values are institutionalized through policy frameworks and implemented through thematic forest categories such as *Wana Boga*, linking forest conservation with community livelihoods and local food systems.

The study also finds that the effectiveness of thematic forest governance depends on collaborative interactions among multiple actors, including the Governor of Yogyakarta, the Environmental and Forestry Service (DLHK DIY), the Forest Management Unit (KPH), and Forest Farmer Groups (KTH). These interactions reflect a governance model that combines state policy, indigenous knowledge, and community participation. Such an arrangement enables forest governance to address ecological sustainability while simultaneously supporting socio-economic development.

The findings suggest that integrating indigenous knowledge into formal governance structures can strengthen adaptive and participatory environmental governance. However, challenges remain, particularly related to potential power imbalances among actors and the risk of commodifying traditional practices within market-oriented development strategies. Addressing these challenges requires governance mechanisms that ensure meaningful community participation and equitable benefit distribution.

This study contributes a new perspective by demonstrating how indigenous values can be institutionalized within regional environmental policy through thematic forest governance. By bridging

indigenous knowledge systems with formal governance frameworks, the thematic forest model in Yogyakarta offers an alternative pathway for natural resource management that integrates ecological conservation, cultural values, and community welfare. These insights provide important implications for policymakers and scholars seeking to develop more inclusive, culturally grounded, and sustainable approaches to forest governance.

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